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ABSTRACT

This resource manual contains criteria, prototype policies, procedure, and forms for establishing a comprehensive sanitation and safety program in Wisconsin public schools. The introduction contains a mission statement and a description of responsibilities for various state employees. The section on policy and procedure development outlines standards for personnel; handwashing; food purchasing and storage; food handling, servicing, and transporting practices; the hazard analysis critical control point; cleaning and sanitizing procedures; solid waste management; equipment prevention maintenance; suspected food-borne illness policy; injuries and accidents; and a plan for fire emergencies. Other sections detail procedures for staff development and training and the safety inspection process. Appendices contain a list of resources and information on Wisconsin's Right to Know Law. Eleven figures, sample handouts, and five sample posters are included. (LMI)

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ED 369 156

PROGRAM DEVELOPMENT

SANITATION & SAFETY for School Food Service

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Sanitation and Safety for School Food Service:
Program Development

Wisconsin Department of Public Instruction
Herbert J. Grover, State Superintendent

Kathleen S. Bass, R.S.
School Food Service Sanitation Specialist

Bambi L. Statz
Administrator
Division for School Financial Resources
and Management Services

Richard Mortensen
Director
Bureau for Food and Nutrition Services

Carol A. Philipps, R.D.
Chief
School Food Service Programs Section

This publication is available from:

Bureau for Food and Nutrition Services
Wisconsin Department of Public Instruction
125 South Webster Street
P.O. Box 7841
Madison, WI 53707-7841
(608) 266-3509

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Foreword

The Department of Public Instruction recognizes the significant effort and contributions made by school food service personnel to provide students with low-cost, nutritious meals that promote the health and well-being that enables children to take advantage of the educational opportunities offered at school. This resource manual will help school agencies establish and carry out an effective sanitation and safety program and protect the health and safety of students and staff.

Herbert J. Grover
State Superintendent

Acknowledgments

The following organizations and agencies have provided valuable information:

American Red Cross
California Iceberg Lettuce Commission
National Sanitation and Safety Foundation
Prolon Dinnerware Division
Soap and Detergent Association
South Carolina Department of Education
U.S. Food and Drug Administration
U.S. Department of Labor
Wisconsin Department of Agriculture, Trade, and Consumer Protection
Wisconsin Department of Health and Social Services - Hotels, Restaurants and Recreational Sanitation Section - Bureau for Environmental Health
Wisconsin Department of Industry, Labor and Human Relations - Safety and Building Division - Bureau for Safety Inspection
Wisconsin Department of Natural Resources
Wisconsin School Safety Coordinator's Association

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Introduction

The school food service customer expects to be served wholesome, appetizing food in a clean, comfortable, and safe environment. Food employees also have expectations—a safe work environment and the necessary materials and skills to perform job responsibilities. A carefully developed and executed sanitation and safety program will assist the school agency with meeting these expectations. *Sanitation and Safety for School Food Service: Program Development* contains criteria, prototype policies, procedures, and forms for establishing a comprehensive sanitation and safety program. Once adapted for the specific school agency operation, the policies and procedures can be incorporated into the existing food service employee manual or serve as the basis for handbook development.

An effective sanitation and safety policy

- provides a successful merchandising tool. Food properly stored, prepared, held, and displayed appeals to the customer.
- increases employee job satisfaction. The commitment of time and resources for staff development is a worthwhile investment. Employees feel good about positive feedback they receive from their customers and supervisor. Appreciated employees value their jobs which results in low employee turnover and infrequent absences.
- prevents fires, accidents, and injuries. An administration that demonstrates a concern for a safe environment will eliminate work hazards. Reduction of hazards can be accomplished by frequent inspections, training, and motivation of employees.
- obtains maximum use of resources. An established program can have a positive effect on employee productivity, life of the equipment and the facilities, and conservation of supplies, food items, and food service funds.

Written policies and procedures are the school agencies' means for managing the food service operation. An official policy statement formalizes a commitment to sanitation and safety and delegates responsibility to a specific committee or person to develop and carry out the program. A policy should explain day-to-day operations. Employees familiar with the policy and trained in all aspects of sanitation and safety will perform their duties safely and efficiently. Training should continue after new employee orientation. Incentives and recognition can help motivate employees to follow regulations.

Inspections of the food preparation, storage, and service areas and a review of the work practices help to detect hazards and determine agency and work site sanitation and safety training needs. The inspection team should consist of staff with responsibilities for administration (school principal), maintenance of the facility (custodial), and food handling and meal service (food service staff). Experts from the local fire department, insurance company, or health department can lend valuable assistance as team members.

Reports and records document the agency's compliance with local and state laws. In addition, the information compiled is useful for developing sanitation and safety procedures and goals.

Sanitation and Safety Policy 1

Introduction
Delegation of Responsibilities

Introduction

Policy and mission statements help emphasize the commitment of the school agency to safety and sanitation. These statements of attitude, outlook, and orientation ensure unanimity of purpose and serve as a focal point for identification with the organization's purpose, motivate the use of the organization's resources, and develop standards for allocating resources. The goals clarify how the mission of the organization will be carried out by the employees. The following examples offer possible ways for schools to express their goals.

■ Sample Policy

School Safety

The _____ Board of Education believes safety education and accident
(name of school agency)
prevention are important to everyone concerned with the school agency. It is the policy of the board that the physical well-being of every student, visitor, and employee be a primary consideration in every school activity. The policy will apply whether the activity is in the building of a structure, the planning of a function, or the performance of a task.

Further, it is an objective of the board and its staff to develop, within the student body, a positive attitude toward accident prevention that will remain with the students and be applicable in their professional and community activities as adults.

It is of prime importance that all supervisory personnel and teachers understand and accept the responsibility for the safety of all people coming into their areas and of all students under their direction.

It shall be the responsibility of the school administrator to execute this policy. In order to have a comprehensive program which will meet the needs of the _____:
(name of school agency)

- The responsibility for developing the total safety program shall be delegated to _____,
(name of person)
who will be directly responsible to the superintendent or assistant superintendent or another administrator of comparable rank, and shall be provided with adequate staff, time, budget, and title commensurate with the task.
- This person, acting in an advisory capacity to all heads of major units within the district, shall be responsible for the promotion and development of an aggressive accident prevention and safety education program for students and professional and non-professional personnel employed by the school agency.

Sanitation

Sample Mission Statement

The mission of the _____ food service sanitation program is to purchase
(*name of school agency*)
foods from approved food sources at optimum quality; store, prepare, and hold foods to preserve nutrients, maximize shelf life, prevent contamination, and inhibit th. growth of harmful microorganisms; and meet customer expectations for cleanliness and food appeal.

Sample Goals

The goals of the _____ are to:
(*name of school agency*)

1. Work towards the highest standards of food quality, food safety, and cleanliness.
2. Protect the health of the customers.
3. Minimize the school agency's liability for food-related illness or injuries.
4. Identify appropriate product specifications for food, cleaning and sanitizing agents, and supplies.
5. Develop policies and procedures that promote effective, efficient, aesthetic, and safe employee practices.
6. Promote staff development.
7. Minimize the charge to the customer through careful use of food items and supplies.
8. Protect the customer and the environment by safe and effective use and the proper disposal of chemicals and appropriate reuse and recycling of resources.

School Food Service Administration Responsibilities

- Promulgate and enforce sanitation and safety rules, policies, and procedures.
- Initiate and evaluate sanitation and safety programs.
- Make the necessary resources available:

— Funds for training; safe, sanitary equipment; and protective devices.

— Contact people such as the fire inspector, insurance safety representative, local health department, and local and state agencies involved with sanitation and safety issues.

- Maintain necessary records to comply with federal and state regulations.
- Receive feedback from the food service staff and the inspection team to ensure that they take prompt preventative and corrective action.

Supervisor's Responsibilities

- Train all employees in the sanitary and safe way to do their work and alert them to existing hazards.
- Provide employees with the necessary safety equipment, fire extinguishers, and protective devices, and supervise them to ensure that they use the equipment properly.
- Take prompt corrective action whenever noticing sanitation and safety hazards.
- Conduct frequent sanitation and safety inspections of all work areas to improve housekeeping, encourage sanitary and safe work methods, and eliminate unsanitary and unsafe conditions.
- Alert school administration of the need for work rule, policy, or procedure revisions and advise administration of the necessary specifications when purchasing equipment and safety devices.

Employees' Responsibilities

- Follow work rules and sanitary, safe procedures.
- Report accidents and unsafe conditions to the supervisor.
- Keep work areas clean and orderly.
- Only operate authorized equipment.
- Think about safety and be alert to unsafe conditions.
- Use the safety devices provided.
- Know the location of the fire extinguishing equipment and first aid kit, and the proper use of each.

Policy and Procedure Development 2

Personnel
Handwashing
Food Purchasing and Storage
Food Handling, Holding, Servicing, and Transporting Practices
Hazard Analysis Critical Control Point
Cleaning and Sanitizing Procedures
Solid Waste Management
Equipment Preventative Maintenance
Suspected Food-Borne Illness Policy
Injuries and Accidents
Plan for Fire Emergencies

Personnel

Food service staff convey an impression of their school through their appearance and performance. Customers dissatisfied with employees' appearance, food handling, and preparation may not return. In addition, unsafe attire and procedures can result in serious injury to employees and customers. Appropriate recruitment and hiring practices, an effective orientation program, and established policies and procedures are imperative to a successful operation.

Job Orientation

The greatest opportunity for motivation and employee education occurs during the first few hours on the job. Employees gain both impressions and attitudes at this time. A structured orientation provides the employee with the needed information and establishes the employer's expectations regarding sanitation and safety procedures and policies. The "Supervisors' First Day Checklist for a New Employee" (see next page) contains the information that they should discuss on the first day of work. New employee orientation involves time for proper training. The investment of time is well spent because it takes more time to redo a job and retrain an employee with poor work habits than to teach a new employee.

A new employee can be mentally swamped if the supervisor runs through too much information at once. Instead, gradually introduce the new employee to the job throughout the day and allow time for questions and for the information to be absorbed. To integrate the new employee into the work group

- plan introductions over the entire day rather than introducing the employee to coworkers, teachers, and administrative staff all at once.
- provide the new employee with a list of the staff and their titles or job functions to help strengthen retention.
- explain how the new employee's job relates to the work of others.
- designate a staff person with similar job functions to serve as a "buddy" for the new employee.
- identify the person to whom the employee can go for help if the supervisor is absent.
- teach the employee the safe and sanitary way to perform the job functions and provide written instruction whenever possible.
- instruct and allow the employee to demonstrate the proper use, safety precautions, and cleaning procedures before allowing the employee to operate equipment on his or her own.

The Supervisors' First Day Checklist for a New Employee

The following areas should be discussed with each new employee on the first day of work. The information should be accompanied with a copy of the school's personnel policies. The supervisor may delegate some of the items to another employee.

- ☐ Accident prevention and reporting procedures
- ☐ Completion of personnel, tax, and retirement forms
- ☐ Employee benefits (sick time, holiday pay, insurance, uniform reimbursement)
- ☐ Employee inservice and training opportunities and requirements
- ☐ Introduction of employee to key personnel (food service staff at the location where they work, office and administrative personnel, custodians)
- ☐ Job description and functions
- ☐ Line of authority
- ☐ Location of equipment, food items, supplies, utensils, chemicals, school office, locker room, and bathroom
- ☐ Location of first aid
- ☐ Location of work and cleaning schedules, instructions for operation and cleaning of various pieces of equipment
- ☐ Parking accommodations
- ☐ Pay periods, time clock operation (if applicable), where to submit time card, and pick up paycheck
- ☐ Phone use policy (personal calls), how to operate the phone, how to answer the phone
- ☐ Probationary period requirements
- ☐ Procedure for notifying supervisor when unable to work (ill, contagious, family member ill) or tardy, include the policy for use of sick leave
- ☐ Proper attire and personal hygiene (hair restraint, uniform, smock top, work shoes, etc.)
- ☐ What to do in the event of a fire, power failure, and other emergencies
- ☐ Work hours, breaks, lunch, overtime

Sample Policy

Policies and Procedures that Promote Personal Hygiene

1. Make sure that employees are aware of the Department of Health and Social Services' chapter HSS 196.10: "No person knowingly infected with a disease in a form that is communicable by food handling may be employed or work as a food handler in a public eating place or other establishment where food products to be consumed by others are handled or produced."

2. Provide applicant with a job description that states the physical exam requirements and a description of the dress code.

3. Establish rules for
   a. personal cleanliness
   b. appropriate work attire
      - clean, light colored, washable uniform (worn only for work)
      - comfortable, clean, non-slip, low-heeled work shoes
      - minimal jewelry (only plain wedding band)
      - minimal amount of make-up
      - hair net
   c. unsanitary/unsafe attire
      - open-toed shoes
      - long-sleeve sweaters and sweatshirts
      - sleeveless tops
      - canvas shoes
      - blue jeans
   d. acceptable food handling practices
   e. reporting illness and injury

4. Take the time to train new employees to perform job functions correctly and provide all employees with a continuous program of instruction and motivation.

5. Observe employees' work habits and health status. Take appropriate action to correct sanitation problems and keep workers with illness and infected cuts and burns away from food.

6. Provide the appropriate facilities and supplies that are necessary to follow the work rules. Examples include:
   - paper towels, soap, handwashing sink;
   - lockers and dressing room;
   - equipment kept in good working order.

7. Set a good example and keep informed about sanitation developments.

Physical Examination Requirements for Food Service Employees

Physical examinations and tuberculin test requirements for food service employees are specifically addressed in Wisconsin State Statutes:

Public Schools

> Chapter 118 of Wisconsin Statutes (118.25 Health examinations) defines "school employe" [sic] as . . . a person employed by a school board who comes in contact with children or who handles or prepares food for children while they are under the supervision of school authorities . . . . As a condition of employment, the school board, except in 1st class cities*, shall require a physical examination including a chest x-ray or tuberculin test, of every school employe of the school district. Freedom from tuberculosis in a communicable form is a condition of employment. In the case of a new school employe, the school board may permit the school employe to submit proof of an examination, chest x-ray or tuberculin test complying with this section which was taken within the past 90 days in lieu of requiring such examination, x-ray or test. If the reaction to the tuberculin test is positive, a chest x-ray shall be required. Additional physical examinations shall be required thereafter at intervals determined by the school board . . . .

In addition, the statutes specify the exemptions from these requirements for religious reasons (118)(2)(b) and the required reporting by the physician providing the physical examination (118)(2)(c).

* Milwaukee is presently the only 1st class city in Wisconsin.

Private or Parochial Schools

> Chapter 143 of Wisconsin Statutes (143.16 and 143.17) states that the governing body of each private or parochial school enrolling pupils in any grades from one to 12 . . . . shall, as a condition of entering or continuing such employment, require a physical examination, including a chest x-ray or tuberculin test, of every employe of the institution . . . . a governing body may, in the case of a new employe, permit the employe to submit proof of an examination, chest x-ray or tuberculin test, which complies with this section taken within the past 90 days in lieu of requiring such examination, x-ray or test. If the reaction to the tuberculin test is positive then a chest x-ray shall be required. Additional physical examinations shall be required thereafter at intervals determined by the governing body.

Exemptions from these requirements for religious reasons [143.17(2)] and the required reporting by the physician providing the physical examination (143.16) are also specified in the statutes.

Health Examinations for Student Workers

Section 118.25(2)(a), Wis. Stats., states that: "As a condition of employment, the school board, except in 1st class cities, shall require a physical examination, including a chest x-ray or tuberculin test, of every employe of the school district." This requirement raises the issue of whether or not school districts should require such examinations from part-time student employees. Some school districts contend that their student employees are not employees as defined by the Fair Labor Standards Act and, therefore, are not governed by s. 118.25(s)(a).

To address this issue, two specific questions were presented for legal consideration.

- Are students considered employees of the school district when they work only part-time for their meals?
- Do these students come under the s. 118.25, Wis. Stats. requirement?

The Department of Public Instruction's Office of Legal Services response is

Some school districts waive the health examination requirement for those students who work in food service on a part-time basis of an hour or less per day in exchange for their meal(s). This waiver by school districts is not statutorily authorized except that to the extent that students are not employees, they would simply not come under the statute at all. The school districts which grant the waiver run the risk that a student might be a carrier of tuberculosis or some other communicable disease and transmit that disease to other students.

It is the recommendation of the Office of Legal Services that school districts at least inquire, on the student's school employment application blank, whether or not the student has had all of the proper immunizations as required for admission to an elementary or secondary school by s. 140.05(16), Wis. Stats., and if not, whether the student intends to be properly immunized. The school district would then have the option of whether to 'employ' the student having or being a carrier of a communicable disease. This Office of Legal Services' recommendation is based in part on the state superintendent's responsibility and duty to ensure that schools operate effectively and that the operation of the public schools is dependent upon a common sense to have some basic information about the health status of a student who has contact with food handling or preparation and that information about immunizations is already a statutory requirement and thus, does not impose an additional burden on the student.

Blood-Borne Disease Control

School food service employees can perform their jobs without fear of infection when they know the facts about Acquired Immune Deficiency Syndrome (AIDS), Hepatitis B, and other blood-borne diseases. In addition, these facts will help the staff respond to people who are infected.

Blood-Borne Diseases of Special Significance

AIDS (acquired immunodeficiency syndrome) is the final stage of a series of health problems caused by a virus called human immunodeficiency virus (HIV). The virus attacks the white blood cells in the human blood system and damages the immune system. A defective immune system makes the body vulnerable to a variety of infections and illnesses. Many of these are uncommon or mild in a healthy person but can be life threatening to someone with impaired immunity. Opportunistic diseases, such as cancer, pneumonia, and meningitis, may eventually cause death.

AIDS-Related Complex (ARC) is a condition caused by the AIDS virus in which the patient tests positive for AIDS infection and has specific clinical symptoms. However, ARC patient's symptoms are often less severe than those with classic AIDS.

Hepatitis B or "serum hepatitis" is an inflammation of the liver due to a bacterial infection.

Transmission of AIDS and Other Blood-Borne Diseases

Evidence suggests that HIV and other blood-borne diseases are most often transmitted sexually or through exposure to needles contaminated with blood and less commonly through blood or blood products. An infected pregnant woman can infect the fetus.

According to the *Surgeon General's Report on Acquired Immune Deficiency Syndrome*,

- casual social contact such as shaking hands, hugging, crying, coughing, or sneezing will not transmit the AIDS virus.
- food prepared and handled by workers with AIDS, or carriers of the AIDS virus, does not present any risks of AIDS infection.
- AIDS is not contracted from sharing towels, cups, straws, dishes, or any other eating utensil.
- AIDS cannot be contracted from toilets, doorknobs, telephones, office machinery, or furniture.

Hepatitis B can be spread by sexual contact. More commonly, it is contracted by exposure to infected blood or use of contaminated needles or syringes.

Universal Precautions

The U.S. Center for Disease Control (CDC) has developed a set of guidelines, or Universal Precautions, to protect health workers from blood-borne disease type infections. The risk for these workers involves accidental contact with the blood of an infected person (stick with needle, broken skin, or mucous membrane exposure). Only the following blood and body fluids require Universal Precautions:

- blood,
- semen,
- vaginal fluids (including menstrual blood),
- amniotic (pregnancy) fluids,
- cerebrospinal (brain and backbone) fluid,
- synovial (joint) fluid,
- pleural (chest) fluid,
- peritoneal (abdominal) fluid, or
- pericardial (heart) fluid.

The following fluids do not require Universal Precautions unless they contain visible blood:

- feces,
- nasal secretions,
- saliva,
- sputum,
- sweat,
- tears,
- urine, or
- vomit.

Although HIV has been detected in saliva, saliva has not been shown to transmit HIV or other blood-borne diseases. However, it can spread other agents such as herpes complex virus, respiratory viruses, and meningitis. Saliva that contains blood does present a risk.

Workers in the school food service setting do not have occupational exposure to blood-borne diseases as part of their normal work function. "Exposure" is defined as "contact with blood or other body fluids to which Universal Precautions apply through percutaneous inoculation or contact with an open wound, non-intact skin, or mucous membrane during the performance of normal job duties." However, all school employees should take precautions when cleaning up blood from **any** injured worker or student.

Universal Precautions for Cleaning Blood or Other Potentially Infectious Body Fluids

Follow standard infection control precautions when there is a possibility of coming into contact with any person's blood. These standard infection control precautions should include

- wearing latex or vinyl gloves.
- using absorbent material to remove the blood.
- disinfecting the area with a diluted bleach solution (one-fourth cup bleach to one gallon of water) or chemical germicides that have been approved by the Environmental Protection Agency for use as "hospital disinfectants."
- disposing cleaning cloths contaminated with blood. Place disposable cloth in a plastic bag before tossing it in the trash. Handle cloth towels soiled with blood (or other body fluids) as little as possible. Maintain these soiled items in separate leak-proof bags to prevent leakage when stored or transported.
- removing any clothing soiled with blood as soon as possible. Soiled clothing can be machine washed and worn again.
- immediately wash any skin that has had contact with blood with soap and water. Hands should be washed after touching blood, even if gloves were worn.

Universal Precautions for First Aid or CPR in the School Setting. Train and instruct school food service employees to observe the school's safety policy when giving first aid or CPR to reduce the risk of becoming infected with any disease.

Universal Precautions for Food Service Employees with Open Lesions. Instruct all food service employees to report open cuts, sores, burns, and other skin ailments to their supervisor before reporting for work.

School Employees and Students Affected with HIV. Employees and students with impaired immune systems resulting from HIV infection (or other causes such as cancer treatments) are at increased risk of acquiring or experiencing serious complications of infectious disease. These individuals should be counseled about the potential risks associated with any transmissible infection and should follow recommendations for infection control to minimize risk of exposure to other infectious agents.

Confidentiality. State and local laws regarding confidentiality and reporting of HIV/AIDS have been enacted. School employees should be advised of these laws and the reason that the laws exist.

HIV and AIDS Education. Education programs have been developed for school personnel and students. Ongoing HIV and AIDS training will help

- separate scientific information from rumor and myth. Risk behaviors can be discussed to minimize exposure to infection.
- ensure that the necessary equipment and supplies are available to minimize the risk of infection with HIV and other blood-borne diseases.
- prepare for AIDS or ARC patients as well as individuals with other chronic illness before the first such case appears at the school.
- set a compassionate example for others.*

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* Information was taken from the following sources:
Red Cross brochures:
- *School Systems and AIDS: Information for Teachers and School Officials*
- *HIV Infection and Workers in Health Care Settings*

The Surgeon General's Report on Acquired Immune Deficiency Syndrome
HSS Publication, *Understanding AIDS*.

Handwashing

Various bacteria easily contaminate the hands of food service personnel. Frequent and thorough handwashing can significantly reduce the bacteria load on their hands and is one of the best ways to control the spread of disease.

Some pathogenic bacteria (bacteria capable of producing food-borne infection or intoxication) that come in contact with hands from nose blowing, handling raw foods, touching dirty objects, fingering the hair, or smoking can be washed away with a vigorous hand wash. However, other types of bacteria, particularly the types found in feces, pimples, and other fluids cannot be easily removed. Often, these types of bacteria are deposited under the fingernails. Personnel must use a nail brush to remove these hard to reach bacteria.

Sample Policy ■

Handwashing

Necessary tools for handwashing include

- a suitable handwashing sink.

— The designated handwashing sink should be located in an area separate from the manual dishwashing area. The prewash sink can be designated as an employee handwashing sink if the utensil washing area is located in the food preparation or serving area. This sink should be limited to food service employees.

- paper toweling. Cloth towels, especially those shared by numerous employees, become contaminated with bacteria and are unsanitary.
- soap (bar or liquid).
- nail brush.

Double Handwashing Method

Employees should use this method

- upon reporting to work.
- after using the bathroom.
- after touching feces, vomit, or other body fluids.

The double wash will remove the high number of bacteria present on the hands.

Steps to follow:

- Remove jewelry and watches. (Only a plain wedding band is appropriate for a food service employee when performing food preparation duties.)
- Turn on faucet and use running water to wet hands. A stopper should not be placed in the wash basin.
- Apply soap to wet hands. Rub hands together to create the friction necessary to remove soil and bacteria. Also, wash the wrist and the lower portions of the arms.
- Use a nail brush to remove the soil and bacteria lodged under the nails.
- Rinse the arms, wrists, and hands. The fingers should be pointed down to allow the water to drain directly off the hands.
- Reapply soap and again work up a lather by rubbing the hands together.

- Rinse hands, wrists, and arms until all soap residue is removed.
- Dry hands, wrist, and arms with paper towels.

Single Handwashing Method

When to use this method:

- Whenever changing from one activity to another.
- After smoking, using a tissue, or sneezing into hands.
- After handling raw foods, touching hair, unloading deliveries, emptying garbage cans, or touching contaminated objects.

Steps to follow:

- Wet hands under running water in the handwashing sink.
- Apply soap to wet hands and rub vigorously. Also wash the wrist and lower portions of the arm if these portions of the body made contact with contaminated objects.
- Rinse hands, wrists, and arms to remove all soap residue.
- Dry hands, wrists, and arms with paper towels.

Disposable Gloves

Wearing gloves can give food handlers a false sense of security. In some instances, a clean, bare hand is more sanitary than a gloved hand. Disposable gloves can protect food from bacterial contamination during preparation and service if the wearer knows the appropriate use of disposable gloves.

- Gloves should be worn to prevent direct contact with cooked or ready-to-serve, potentially hazardous food items such as sliced, pre-cooked meats, poultry, and salads. Also, a glove provides aesthetic appeal when serving an item (such as a bun) with the hands. Therefore, a glove is not necessary when using a spatula, fork, tongs, ladle, or other utensil.
- Gloves should be used for a single-purpose task (slicing ready-to-serve meat, preparing salads) and then discarded.
- A glove needs to be changed whenever it becomes contaminated from touching the body (nose, hair, eyes, etc.), food items, or other objects in the kitchen (phone, oven door, etc.).
- A glove needs to be changed whenever it is torn, punctured, or worn for a prolonged period of time. Food-borne illness bacteria such as *Staphylococcus aureus* are naturally present on the hands. These bacteria will thrive in the warm, moist environment inside a glove. A rip or puncture will release bacteria into the food that is being handled. Consequently, the glove could be a source of contamination for food.
- Hands should be washed thoroughly after wearing a glove to remove harmful bacteria that have multiplied in the warm, moist environment inside the glove.

Food Purchasing and Storage

Well-defined food purchasing practices enable the school agency to obtain quality products. Purchasing by specification is the best insurance that the product received is the kind, quality, and quantity ordered. Specifications furnish precise and complete descriptions of the products to the vendor. Sanitation standards that should be included in specifications to ensure that food is safe and sanitary before it reaches the school are included in the *Guidelines for the Purchase of Approved Food Supplies*.

Inspection of food upon receipt is the only guarantee that the school agency obtains what it ordered and that these items are in an acceptable condition. Effective receiving procedures include a system to

- compare purchases and USDA Donated Food Program items against the invoices and compare invoices against orders for specification, number, and quantity of items received.
- check items for infestation or damage to packaging, product, weight and fill, and quality.

The agency should communicate with the food purveyors and trucking firms to establish an appropriate delivery time. A schedule will prevent products from sitting on an unattended delivery area under inappropriate conditions.

Once properly received and dated, food deliveries must be quickly placed in storage. Delays can impact on quality and shelf life of the products. Specific equipment items will assist with prompt and safe transition of food to the appropriate storage area. Items such as a two-wheel hand truck, sturdy cart, and platform dollies are of special importance to move new items into storage and rotate existing stock. Recording the date of receipt with those items accepted for delivery is important for inventory control and proper stock rotation.

Characteristics of food storage—dry storage, refrigerated storage, and freezer storage—describe the conditions for protecting the integrity of the food. Inappropriate storage temperatures can have a drastic effect on food quality and safety, thus, continuous monitoring of the storage temperatures is essential. Temperature logs can alert food service and maintenance staff about faulty equipment before an actual breakdown occurs. A description of the purpose and use of a temperature log for cold storage units appears in this section with a prototype temperature log form.

Even though food service operations take necessary precautions, equipment and power failures can happen. The emergency procedures contain recommendations for planning for such an occurrence, outline what to do when the power fails or before the repair agent arrives, and describe how to decide if an item can be saved or when it needs to be thrown out.

Sample Policy

Guidelines for the Purchase of Approved Food Supplies

Develop written specifications for each food item

1. Food in sound condition: free from spoilage, filth, or other contamination, not adulterated, and safe for human consumption.
2. Food from sources that comply with all laws related to food and food labeling.
3. Milk and milk products that have been pasteurized and meet the grade A quality standards.
   - Dry milk and dry milk products made from pasteurized milk and milk products.
4. U.S. Department of Agriculture inspected meat and meat products.
5. Seafood obtained from sources approved by the U.S. Department of Commerce.
   - Fresh and frozen shucked shellfish, including oysters, clams, and mussels must be packed in non-returnable packages identified with the name and address of the original shell stock processor, shucker-packer, or repacker, and the interstate certification number.

6. Clean, whole eggs, with shell intact and without cracks or checks.
   - Pasteurized liquid, frozen, or dry eggs.
   - Pasteurized dry egg products.
   - Commercially-prepared, cooked, and packaged egg products.

The food items described below are prohibited for use

1. Home-processed or home-prepared food items.
2. Food in hermetically sealed containers that was not prepared in an approved food processing establishment.
3. Food in bulged, dented, damaged, or unlabeled cans or packaging.
4. "Distressed," "reconditionable," or "salvageable" food items or "factory seconds."

Factors That Cause Food Spoilage

Improper storage temperature.

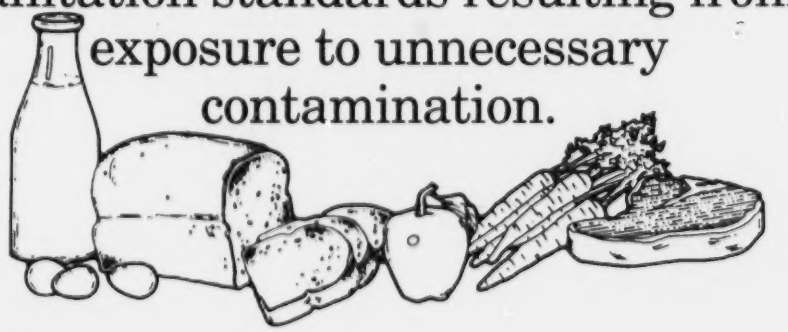
Incorrect and excessive storage periods.

Unacceptable levels of ventilation in storage areas.

Failure to segregate foods in storage.

Excessive delay between receipt and storage of food products.

Inadequate or unacceptable sanitation standards resulting from exposure to unnecessary contamination.



Dry Storage

- Dry (above ground storage desirable) with relative humidity range between 50 percent and 60 percent
- Cool (temperature range between 50° and 70°F)
- Free from direct sunlight, exposed or unprotected sewer or water lines, and away from trash receptacles
- Well-ventilated (windows, fans, and wall vents) to provide air circulation
- Free from insects and rodents
- Clean and orderly floors, walls, ceilings
- Separation of food and paper goods from chemicals and cleaning supplies to prevent absorption of odors and contamination
- Secure from pilferage or easy access
- Sufficient light for identification of foods and for detection of spills and unclean areas
- Free from garbage, trash, and grease storage
- Foods stacked on shelves or pallets off floors
  — shelves slatted six inches above floor and two inches from wall
  — food stacked to permit air circulation
- Airtight, labeled, National Sanitation Foundation-approved containers for open sacks of sugar, flour, rice, beans, etc., off floor, on dollies, free of dirt and damage that could harbor insects or rodents
- Inspection of new inventory for dirt and infestation prior to storing
- Dated and rotated stock to ensure oldest items are used first
- Store goods in suitable areas
  — not toilet rooms or entrances

Refrigerated Storage

- Store potentially hazardous foods at or below 40°F
- Foods securely covered and stored to prevent contamination of items that do not require further washing or cooking
- Properly functioning:
  — thermostat
  — gaskets to provide a tight seal between door and wall
  — lights protected from food
  — drain holes cleaned and draining
  — defroster
- Daily and weekly cleaning schedule
- Slatted shelves that are not corroded

- Equipment (pans, trays, pots, racks, dollies) cleaned before going into refrigerators
- Independent power source
- Security locks on all equipment where food is stored
- Fans and motors free from blockage for adequate ventilation
- Maintenance and inspection records for compressor, condenser, motors
- Thermometer available and temperature checked daily
- All foods stored off floor
- Adequate air circulation
- Food stacked to allow for proper circulation

Freezer Storage (upright, chest, walk-in)

Same qualities as discussed for refrigeration except:

- Temperature range (-10° to 0°F)
- Regularly scheduled defrosting and cleaning; heavy frost increases energy costs
- Labels and records to note "what" and "when" items were placed into the freezer
- Preferably separate power supplies, especially for summer storage with an appropriate alarm system
- Slatted shelves preferred over solid shelves
- Do not block fans inside a freezer
- Sufficient ventilation needed to provide air for motor
- Food properly prepared and wrapped for freezer storage to prevent deterioration of foods
- Thermometer available and checked daily

Cold Storage Temperature Log

Thermometers must be located in each cold storage unit and monitored daily to assure that potentially hazardous foods are kept at the required temperatures (40°F or below for refrigeration units and 0°F or below for freezers). A temperature log will show that the school agency complies with the sanitation requirement, provides advance warning of a refrigeration or freezer unit mechanical failure, and maximizes the shelf life and quality of the food stored.

- Post a new temperature log on the door of each cold storage unit or at a designated place each month.
- Designate the responsibility to a person or people for recording the temperature on a daily basis during the school year and when school is not in session.
- Instruct the designated person to contact the person listed on the log if the unit fails to register the correct temperature.
- Submit the completed log to the contact person.

Temperature Log — Cold Storage Unit

Post a New Log Each Month

	Month

Submit completed log to		
In case of emergency contact 1.	Title	Telephone
2.	Title	Telephone

Safe Freezer Temperature 0°F or below
Safe Refrigerator Temperature 40°F or below

Day of Month	Time	Initials	Day of Month	Time	Initials
1			17		
2			18		
3			19		
4			20		
5			21		
6			22		
7			23		
8			24		
9			25		
10			26		
11			27		
12			28		
13			29		
14			30		
15			31		
16					

Power or Freezer Unit Failure

If the power fails or the freezer unit stops operating normally:

- Keep cold air inside, do not open the door of the freezer unit unless it is necessary.
  - A fully loaded freezer will hold food at freezing temperatures about two days; a half-full freezer about one day.
  - If the freezer is not full, group packages to form an "igloo" to slow the thawing process.
- If the normal operation of the freezer unit cannot be resumed before the food will start to thaw, use dry ice or remove the food to a locker plant.
  - When using dry ice, place it on cardboard on top of the packages and do not open the unit except to add additional ice or remove the dry ice when power has been restored. Follow the handling instructions. Do not touch the dry ice (it can remove skin) and be careful not to breathe the fumes in an enclosed area. Twenty-five pounds of dry ice will keep the temperature of a ten cubic foot cabinet freezer at or below 32° for three to four days if the unit is fully loaded.
  - When taking freezer items to a locker plant or commercial storage, use insulated totes, coolers, or layers of newspaper to insulate the food items.
- If the power has been off for several days, evaluate the items to determine what needs to be discarded and what items can be used. Refer to the following charts for the different types of frozen foods and the criteria for "When to Save and When to Throw Out."
- Generally, be very careful with meat and poultry products or any food containing milk, cream, sour cream, or soft cheese. *When in doubt—throw it out.* Remember, appearance or odor are not reliable criteria. Do not taste foods to determine safety. Some foods may have an acceptable smell and appearance but contain a high level of food poisoning bacteria if the food has been held at improper temperatures for too long of a period of time.
- Contact the Department of Public Instruction, Bureau for Food and Nutrition, Commodity Program Section to receive directions for discarding USDA Donated Foods or refer to the *Commodity Program Handbook*.

Plan ahead for an emergency:

- Know in advance where to buy dry ice, block ice, or obtain locker space.
- Develop emergency freezer sharing plans with other schools in another part of town or in a nearby town.
- Obtain insurance coverage for food loss due to power or freezer unit failure.
- Follow manufacturer's instructions and recommendations for freezer unit maintenance and repair.

Figure 1

What to Do with Freezer Foods When Power is Lost

	Meat/Poultry			Dairy Items		Vegetables, Fruits, and Juices	
Condition of Food	**Beef, Veal, Lamb, Pork, Poultry**	**Variety meats (liver, kidney, heart, etc.)**	**Casseroles, stews, combination dishes**	**Foods containing dairy products**	**Hard Cheese, butter, and margarine**	**Garden**	**Commercially Packaged**
Ice crystals still intact, food still cold (at or below 40°F)	Refreeze	Use within 48 hours. Do not refreeze.	Cook and serve immediately or cook and refreeze. Do not refreeze previously cooked dishes.	Cook and serve immediately.	Refreeze	Refreeze. May lose some texture and flavor.	Refreeze. May lose some texture and flavor.
Thawed, but held above 40°F under 2 hours.	Cook and serve or cook and refreeze.	Cook and serve immediately.	Cook thoroughly and serve immediately.	Discard	Refreeze or refrigerate	Juices—refreeze. Vegetables and fruits—Cook and serve immediately or cook and refreeze.	Juices—refreeze. Others—discard.
Held above 40°F for over 2 hours	Discard	Discard	Discard	Discard	Refreeze or refrigerate.	Discard if mold, yeasty smell, or sliminess develops.	Discard if mold, yeasty smell, or sliminess develops.

Adapted from: *Food News For Consumers*, USDA Publication, 3.2 (Summer) 1986.

Figure 2

What to Do with Refrigerated Foods When Power is Lost

Food item	What to do	Food item	What to do
Milk	Discard 8 hours after power loss.	Fresh fruits and vegetables	Normally safe as long as they look acceptable. Discard if mold, yeasty smell, or sliminess develops.
Fruit juices, opened	Safe unrefrigerated. Discard if cloudy, bubbly, fermented, yeasty, or moldy.	Fresh meats and poultry	Discard if held above refrigerator temperature 40°F over 2 hours.
Eggs—Fresh	Safe unrefrigerated 5-7 days. Discard if shells are cracked or odor and discoloration is present.	Lunch meats/hotdogs	Discard if held above refrigerator temperature 40°F over 2 hours.
Hard-boiled	Discard if held above refrigerator temperature 40°F over 2 hours.	Mayonnaise—Opened	Discard 8 hours after power loss.
Hard cheeses, butter, and margarine	Safe unrefrigerated if well wrapped. Discard if mold or rancid odors develop.	Opened containers of: vinegar and oil salad dressings, jellies, jams, mustard, ketchup, pickles, olives.	May be kept safely unrefrigerated until power returns.

Adapted from: *Food News For Consumers*, USDA Publication, 3.2 (Summer) 1986.

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Figure 3

Storage Life of Food Items

Item	Dry Storage *50°-70°F*	Refrigerator *34°-40°F*	Freezer *Below 0°F*
Beans, dried	1-2 years	2-3 years	
Beef, ground		1-2 days	3-4 months
roasts		3-5 days	6-12 months
patties		1-2 days	8-10 months
cooked		3 days	6 months
Butter		30 days	6-12 months
Cheese, processed		360 days	not recommended
cheddar		540 days	not recommended
mozzarella		30 days	not recommended
Corn Meal	36 months	12 months	
Cured Meats, Luncheon		3-5 days	1-2 months
Sausage		1-2 days	1-2 months
Dates		8-12 months	
Eggs, in shell		3-5 weeks	
hard-boiled		1 week	
frozen		1 day (thawed)	1 year
dry	4 months	1 year	
Flour, bleached	12 months	30 months	
whole grain	2-4 months	4-6 months	
Fruits, canned	12 months	36 months	
Gravy		1-2 days	3 months
Honey	24 months	48 months	
Milk, nonfat dry	5-9 months	10-15 months	
fluid		5 days	1 month
Nuts	1 year		
Pasta	3 months		
Pork, ground		1-2 days	1-2 months
roasts		3-5 days	4-8 months
cooked		3 days	6 months
Poultry, whole		1-2 days	12 months
parts		1-2 days	9 months
cooked		3 days	6 months
Prunes, dried		15 months	
Rice, milled	24 months	48 months	
Salad Oil	6-9 months		
Vegetables, canned (low acid)	12 months	24 months	
canned (high acid)	7-12 months	12 months	

Sources: Food Marketing Institute and U.S. Department of Agriculture.

Food service employees must be alert to the critical temperatures of potentially hazardous foods. Thermometers are a valuable tool, but it is essential to be familiar with their characteristics. The Classification and Use of Thermometers poster describes the various types of thermometers used in food service operations. The poster, Product Thermometers, details selection tips and steps for appropriate use. "Critical Temperatures for Holding Foods" shows temperatures of special significance.

Food presentation on a self-service line can have a major effect on sanitation and safety. The section, "Self-Service," contains suggestions for providing effective and efficient service.

In many instances, school food service agencies serve food prepared at a central kitchen. "Satellite Systems" details guidance for keeping food safe before, during, and after it reaches the satellite location. A sample packing slip appears in this section to record the information about the food items delivered to the school with a column to record the amount of food sent, serving size, and the temperature of the food item.

Characteristics of Thermometers

The response speed of thermometers is critical, especially with portable (testing) thermometers. Bimetal thermometers respond rapidly. For example, when properly immersed in water, they respond to as much as 99 percent of their range in 20 seconds. Melt devices enclosed in paper strips or applied in liquid or crayon form respond to temperatures within one to two seconds. Melt devices enclosed in glass respond more slowly. Response time also depends on the medium in which the thermometer is immersed. For example, a thermometer that responds to 99 percent of its range in 37 seconds when immersed in water may require as much as 75 seconds in oil or five minutes in air for the same response.

Manufacturers express accuracy in terms of ± percent of range. For example, if the range of a particular thermometer is from 0° to 220°F and the accuracy is expressed as ±1 percent, then the instrument reading is at least within ±2.2°F of the actual temperature.

Any thermometer is subject to loss of accuracy due to calibration shift with time and use. This shift, caused by stresses placed on the materials during the manufacturing process, is more obvious at higher temperatures. Accurate temperature readings depend on proper immersion of the thermometer, but immersion varies for different types of thermometers.

Partial Immersion applies to all bimetal thermometers. The partial immersion depth may vary depending on the medium, as indicated by the manufacturer. With some bimetal thermometers, the manufacturer may specify a stem immersion of two inches in liquid and four inches in air or other gases.

Total Immersion applies primarily to some models of liquid-filled instruments. For total immersion instruments, the immersion depth must equal the column height of the temperature reading on the thermometer.

Complete Immersion applies to maximum-registering and wall-type thermometers. The entire thermometer must be placed in the equipment or area.

The readability of a thermometer is critical, so it is important to choose dial sizes and graduations large enough to minimize errors in reading. Be sure to locate fixed-in-place thermometers in places convenient for reading.

Classification and Use of Thermometers

The appropriate thermometer or temperature measuring device will help achieve the necessary temperature controls to maintain food safety, food quality, and reduce energy costs. Information about use and care of thermometers and temperature controls follows.

1. Portable testing thermometer

Use: Tests the temperature of food products. These thermometers will not provide an accurate reading of the rinse temperature of the dish machine or of the storage environment of equipment.

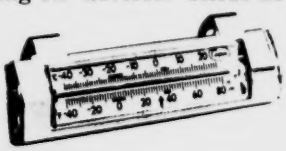
Description: Dial face, metal probe (bimetal) thermometer.

Warning: The liquid-filled instruments (such as home-style meat and candy thermometers) are not permitted for taking temperatures in the school food service operation because of the danger of breakage and mercury poisoning.

2. Equipment thermometers

Use: Measures the temperature of the storage environment. Equipment thermometers do not give, and are not intended to give, a measurement of the food product temperature.

Description: "Built-in" or "hang-on" devices. These devices can be of several types:

1. Liquid filled 
2. Bimetal
3. Capillary
4. Recording capillary (record the temperature on a chart)
5. Digital

3. Melt Devices

Use: Monitors a temperature point during transport or storage of food or monitors the temperature of the dish machine.

Description: These devices contain or consist of wax with a specific melting point. The device will melt when the internal temperature of the transport or storage unit or the rinse water in the dishmachine exceeds the melting point.

Product Thermometers

- Dial face diameter should be a minimum of one inch with 2°F increments. A range of 0° to 220°F is satisfactory for most applications. More specific ranges may be desirable in some instances. If the thermometer is not to be used as a "pocket" instrument, a large dial face will improve readability.
- For most evaluations, a minimum stem length of five inches is sufficient. Some applications require a longer stem.
- Some instruments are available with a "calibration nut," immediately behind the dial, for adjusting the indicating needle during calibration.
- The immersion point on most product thermometers is about two inches up the stem. The immersion point varies for different makes, so be sure to read the manufacturer's specific instructions.
- In practice, the temperature on the dial is an approximate average of temperatures being sensed between the immersion point and immediately behind the tip.

Steps for Measuring Food Product Temperature

1. **Sanitize the instrument** with an acceptable wash, rinse, and sanitation procedure. Alcohol swabs can be used to sanitize the instrument after the washing and rinsing, but allow sufficient time for the alcohol to evaporate before using the instrument.

2. **Place the thermometer** in the thermal center of the product. Several readings may be required to determine the hot or cold spots. Keep in mind the sensing distance of the thermometer and its position in the product.

3. **Allow time** for the thermometer to stabilize in the product before recording a reading. For best results, observe pointer movement and wait until there has been no movement for at least 15 seconds. The instrument will react at different rates depending on the product.

4. **Complete cleaning** and sanitizing is recommended between food product temperature measurements. Exercise special caution after using the instrument in raw food products.

Checking Calibration

In general, the calibration shift of a thermometer will be consistent throughout its range, except when the instrument has been physically damaged, in which case it should be discarded. There are three ways to check the calibration of a thermometer.

1. **Ice Point Method.** This is the best method for checking the accuracy of any thermometer except maximum-registering thermometers. Fill an insulated container, such as a wide mouth thermal bottle, with a mixture of potable crushed ice and water. The container must have crushed ice throughout to provide an environment of 32°F, so more ice may need to be packed into the container during the process. When the mixture of ice and water has stabilized (after four to five minutes), insert the thermometer to the appropriate immersion depth. Be sure to hold the stem of the instrument away from the bottom and sides of the container (preferably one inch) to avoid error. The ice point method permits calibration within 0.1°F.

2. **Boiling Point Method.** This method, accurate within 1°F of the true temperature, is not as accurate as the ice point method, but it is the only method that can be used with maximum-registering thermometers. It is also useful to verify suspicion of a damaged instrument. Place a container of potable water on a heating element. After the water in the container has reached a complete "rolling" boil, insert the instrument to the appropriate immersion depth. Immerse maximum-registering thermometers completely. Be sure there is at least a two-inch clearance between the stem or sensing element and the bottom and sides of the container.

3. **Screening (checking).** The screening method, accurate within 1° to 2°F, can be effective for stationary equipment thermometers. To check fixed units, thermostats, and recording thermometers, place a portable or testing thermometer near the sensing element of the fixed unit (within one-fourth to one-half inch). Allow the testing thermometer to reach equilibrium, and then compare readings.*

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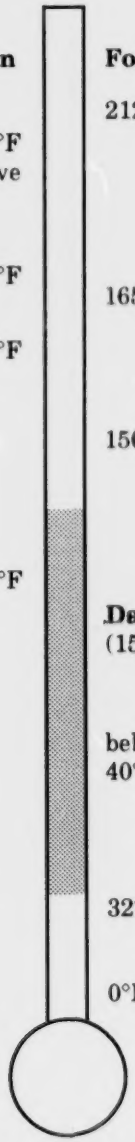
* Information was taken from materials prepared by:
National Sanitation Foundation
NSF Building, P.O. Box 1468
Ann Arbor, Michigan 48106

Critical Temperatures for Holding Foods

Tableware and Utensil Sanitation

Dishmachine final rinse (determined by type of machine)	180°F or above
Rinse water for manual sanitizing	170°F
Dishmachine wash water	140-165°F
Chemical dishmachine wash water	120°F



Food Handling and Storage

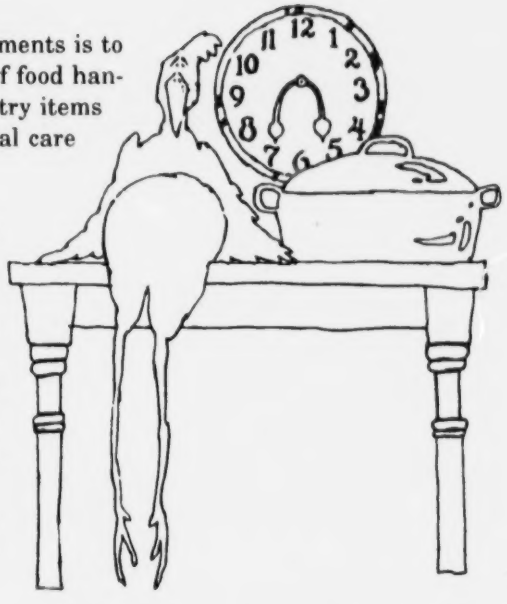
212°F	Water boils
165°F	Minimum for cooking poultry, stuffed meats, and reheating of potentially hazardous foods
150°F	Cooking, storage, or display of potentially hazardous foods at or above this temperature

Danger Zone for Food Safeness
(150°F-40°F) (shaded area)

below 40°F	Storage or display of potentially hazardous foods at or below this temperature
32°F	Water freezes
0°F	Storage of frozen foods

Handle Poultry with Care

One of the goals of all food service establishments is to keep foods safe to eat throughout each phase of food handling—storage, preparation, and serving. Poultry items can be contaminated with *Salmonella*, so special care must be taken to prevent food-borne illness.



Receiving/Storage. Foods should be inspected when received. Indications of spoiled or inferior poultry are readily observable. Soft flabby flesh usually means an inferior product. A purplish or greenish overall cast may mean staleness or improper handling. Other signs of spoilage include an abnormal odor, stickiness under the wings and around the joints, and darkened wing tips.

Store frozen poultry in original shipping container off the floor in the freezer at or below 0°F. Use within eight months for the best quality.

Preparation. Poultry must be properly handled to avoid spoilage or serious food poisoning. Thaw only the amount needed for one day. Avoid leftovers. Thaw in the refrigerator (34° to 40°F) overnight. Do not thaw at room temperature or in water. If accidentally thawed, cook promptly. Do not refreeze any poultry.

After thawing, wash thoroughly in cold water and drain. Cook chicken promptly or refrigerate and cook within 24 hours after thawing. Do not partially cook one day and finish cooking the next. Chicken nuggets should not be thawed before heating.

Avoid cross-contamination by always washing hands and washing and sanitizing utensils and food-contact surfaces after handling raw poultry or other meats and before handling ready-to-serve foods or foods that will not require further cooking. If plastic gloves are used, they should be discarded after handling raw poultry and before handling anything else.

Poultry, stuffed meat, and all stuffings should be cooked to internal temperatures of 165°F. This temperature should be reached without any interruption of the cooking process. Competent as a cook may be, his or her judgment is never an adequate basis for determining the temperature of a product. Thermometers should always be present for the cooks and their helpers and should be used to check the temperature of products before the cooking process is ended. Periodic checking during serving is advisable.

Self-Service

Self-service is an effective and efficient innovation for school lunch programs. It provides an opportunity for attractive merchandising of food, an essential aspect of food service, without jeopardizing the sanitation and safety if some precautions are taken. Many customers also enjoy serving themselves.

The following suggestions will help keep food safe and attractive:

- Use National Sanitation Foundation (NSF) approved plastic or stainless steel serving bowls or containers. Recycled food containers from commercial products (for example, ice cream pails) become unsightly after repeated use, cannot be properly sanitized, and are not recommended for reuse.
- Provide students with the appropriate self-service utensils (spoodles, ladles, tongs). Various utensils have been designed especially for students.
- Dispense condiments in squeeze bottles, pump containers, pour dispensers, or individual packets.
- Arrange food items to minimize reaching across displayed food items.
- Limit the quantity of food displayed and replenish the food items often to control the exposure of food to contaminants.
- Replenish the line with a clean container *and* serving utensil.
- Do not mix contaminated food from the existing container with fresh food brought out for display.
- Dispose of or cook any raw vegetable or fruit used in self-service.
- Dispose of any leftover meats, cheese, or dairy products that have been set out for display.
- Use ice or heated serving units to keep potentially hazardous foods at the appropriate temperature (40°F or below for cold items and 150°F or above for hot items) if such items are displayed for more than one serving period or if the serving period exceeds one-half hour in duration.
- Consider protecting food with a "sneeze guard" to prevent contamination. Keep in mind that a sneeze guard will not offer protection if the students are of various heights and if students fail to use this device as designed. (See the following easy-to-build design.)
- Store the wiping cloth used to wipe up spills on the self-service display table in a sanitizing solution between uses.
- Assign food service employees to supervise the operation to make sure customers observe sanitary practices:

— proper use of utensils.
— proper use of "sneeze guards" (if applicable).

- Remove contaminated utensils that have fallen to the floor or are improperly handled and replace with a clean utensil.
- Keep the following items near the self-service area:

— paper toweling for wiping up spills from the floor.
— extra serving utensils.

- Guard against burns and scalding by

— serving or pre-dishing the hot entree items, such as soups, to the younger elementary students.
— heating foods (with the exception of potentially hazardous foods) to the appropriate serving temperature for the age and grade level of the students.
— placing hot items in appropriate serving containers. Do not place hot pans directly from the stove top or oven on the serving line.

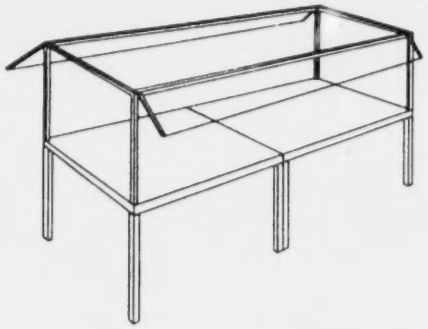
Food Protection Shields

Special consideration should be given to the average mouth height and shield angle in educational and special installations. The following average mouth heights should be used in designing food display protection shields.

Age Group	Mouth Height (average)
Elementary	3.0 ft. - 4.8 ft.
Middle School	3.5 ft. - 5.0 ft.
High School	4.0 ft. - 5.0 ft.

How to Build a Salad Bar

Many schools build their own salad bars to meet their special needs and budget. An inexpensive sneeze guard can be built to fit over regular cafeteria tables or steam tables. (See the following two easy-to-build designs.)



Cafeteria Table Set-up. Some schools use one long cafeteria table or two tables end-to-end to create a salad bar. Tables can be in front or behind each other to keep lines uniform and to allow more room for plates, milk, rolls, and dressings. Place perishable items in pans of ice.

Sneeze Guard. In most states, sneeze guards are required for salad bars. They should be large enough to assure proper sanitation and high enough to allow ease of serving. Materials should always be clear to allow adequate visibility. Acrylic plastic is the most popular material, attached to a metal or wood frame. It can be free-standing or clamped to the table, as long as it is stable.*

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* Adapted from:
California Iceberg Lettuce Commission brochure. (P.O. Box 3354, Monterey, CA 93940.)

Department of Health and Social Services-Environmental Sanitation and Milk Certification Section, *Guidelines for Construction and Operation of Food Display Facilities.*

Figure 4

Cafeteria Counter

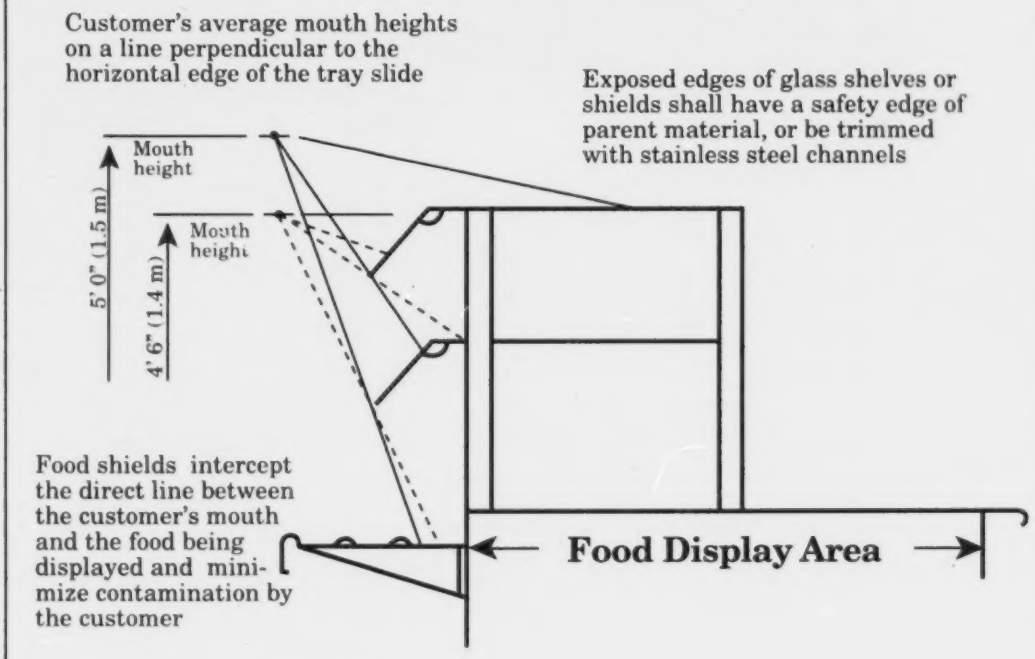
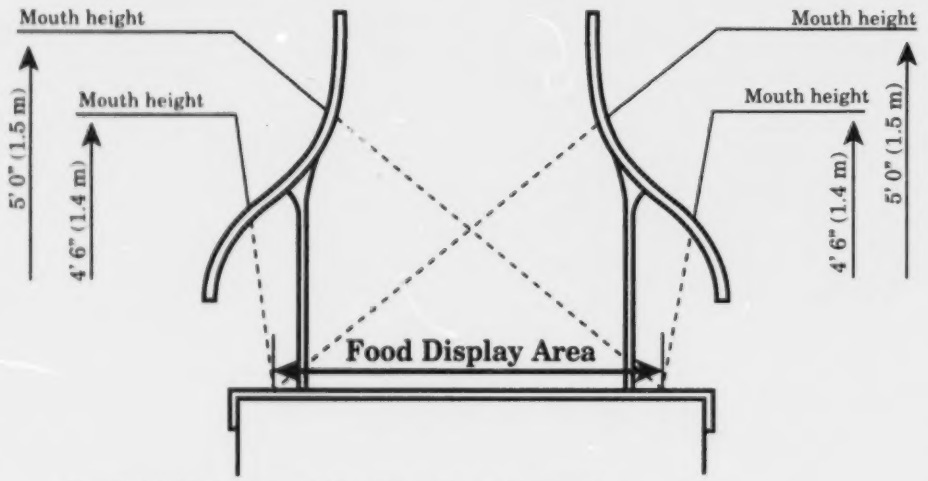

Customer's average mouth heights on a line perpendicular to the horizontal edge of the tray slide
Exposed edges of glass shelves or shields shall have a safety edge of parent material, or be trimmed with stainless steel channels
Mouth height
5' 0" (1.5 m)
Mouth height
4' 6" (1.4 m)
Food shields intercept the direct line between the customer's mouth and the food being displayed and minimize contamination by the customer
Food Display Area

Figure 5

Buffet Table

Customer's average mouth heights on a line perpendicular to the horizontal edge of the buffet table

Exposed edges of glass shelves or shields shall have a safety edge of parent material, or be trimmed with stainless steel channels



Food shields intercept the direct line between the customer's mouth and the food being displayed and minimize contamination by the customer

Satellite Systems

A satellite system involves the procurement and some or all of the meal production at a central kitchen for shipment to a receiving kitchen. This type of system presents conditions that can affect the safety and quality of the food. The transportation, additional handling, and holding periods involved in this type of meal production and service increases the likelihood for microbial contamination and growth and the deterioration of the food items. The food served at the satellite receiving kitchen will be safe and appealing if staff follow appropriate food handling and personal hygiene practices; develop and implement standardized procedures for the preparation, transport, initial, and final heating of foods; and monitor food temperatures.

Keep food safe before transportation

- Instruct food service employees to wash their hands when reporting to work and whenever changing from one activity to another.
- Wash, rinse, and sanitize food contact surfaces after each use to prevent cross-contamination of pathogenic bacteria. Wooden surfaces are difficult to sanitize and should not come into contact with food (with the exception of baker's tables used for bread products).
- Minimize the time that potentially hazardous food items are held in the "danger zone" (40°F to 150°F). These items must be kept at a temperature below 40°F **or** above 150°F except during necessary periods of preparation.
- Safe temperature rules:
  - The longest accumulated period (includes all phases of preparation, holding, and transport) during which potentially hazardous food may safely remain in the danger zone is four hours.
  - Two hours is the maximum amount of time food should be held in the 60°F to 120°F temperature range.

Keep food safe during transportation

- Evaluate and revise the food production work schedule in the central kitchen and the delivery schedule to minimize holding periods of food items and maintain the temperature of the hot and cold food items.
- Identify, obtain, and use the appropriate transportation equipment for the type of satellite system.
  - Use National Sanitation Foundation (NSF) or U.S.-Public-Health-approved sealable transportation equipment or totes for all food items that have been removed from their original container or prepared at the production kitchen. Cardboard boxes should only be used for canned items and for the fresh fruit or vegetables that will be washed at the satellite school.
  - Purchase transportation equipment and totes that are the appropriate size and construction for lifting and hauling by food service employees and delivery personnel.
  - Use insulated, heated cabinets to transport hot items from a central kitchen to satellite kitchens. Insulated transportation equipment is also necessary to protect and maintain the temperature of cold items.
  - Heat hot items to a temperature of 150°F or above before placing them into the transportation equipment.
  - Preheat or prechill transportation equipment, if possible.
  - Arrange hot and chilled food items that are transported in the same vehicle to limit the exchange of heat (transfer of heat to cold foods and vice versa).
- Design an appropriate packing slip to include with the food items sent to the receiving school. (See Sample Packing Slip on p. 37.)

• Obtain the internal temperatures of hot food items with a product thermometer and note the temperature on the packing slip.

Keep food safe at the satellite school

• Provide the satellite kitchen with appropriate hot and cold storage or holding equipment.
• Instruct employees at the satellite kitchen to
— check the items received against the packing slip and obtain a temperature reading of the hot food items delivered. Note any discrepancies or problems on the packing slip.
— follow directions included on the packing slip for holding, preparing, and portioning the menu items.
— use batch preparation methods, whenever possible, to reduce the holding time of food prepared or heated at the satellite.
— heat potentially hazardous foods (such as precooked beef patties, fish squares), prepared at the satellite kitchen, to a temperature of 165°F. Use a product thermometer to spot check the temperature of each batch.
— return hot and cold items to the appropriate holding units between serving periods.
— obtain direction from supervisors before discarding or reusing leftover food items.
— use equipment for its intended purpose. For example, the heated wells of a serving counter cannot safely **heat** potentially hazardous food items. These wells should be used to **hold** hot foods during the service period.
• Periodically evaluate the adequacy and reliability of equipment used at the satellite schools to ensure that food items can be heated or maintained at the appropriate temperatures.
— Calibrate ovens when the exterior dial settings are different from the actual temperatures obtained.
— Determine where hot and cold spots exist in the ovens and adjust the rack positions and pan arrangements accordingly.

Joint Agreement/Satellite School

Person sending meals *Initial*	Time sent	Person receiving meals	Time received

Deliver meals to *School / Site*	Date
Contact person	Telephone

Components of Meal	Serving Size	Number of Servings Sent	Temperature of Hot Foods	Amount Left Over
Entree				
Vegetables				
Fruits				
Bread/Rolls/Pasta				
Milk				
Other				
Comments from receiving site				

Meal Pattern Requirements Components	Minimum Serving Size *Grades K-3*	 *Grades 4-12*
Meat/Meat Alternate	1-1/2 ozs.	2 ozs.
Fruit/Vegetable (two or more sources)	1/2 cup	3/4 cup
Bread/Bread Alternate	1 per day/8 per week	same
Milk (lowfat unflavored, whole)	1/2 pint	1/2 pint

Hazard Analysis Critical Control Point

Traditionally, sanitation inspection programs have focused on construction details and aesthetic appearance. The concentration on cleanliness enhances the appearance of food service establishments. However, concentration on clean floors, walls, and ceilings which occurs on a traditional inspection does not address the problems that contribute to food-borne illness—safe handling of food. Investigation of food-borne illness outbreaks consistently reveals that the major factors are

- preparing food several hours or more before meal service.
- holding hot foods at unsafe temperatures for prolonged periods.
- improperly cooling hot foods.
- inadequately reheating foods.
- contaminating foods by an infected food handler.

For this reason, the Hazard Analysis Critical Control Point (HACCP) strategy used by environmental health specialists can prevent disease in food production and preparation. The approach, adapted from the nation's space program and first recommended to the food industry and to government in 1971, is "a systematic approach to be used in food production as a means to assure food safety." The basic principles that underlie the concept follow:

- Assess hazards and risks associated with growing and harvesting raw materials and ingredients; and processing, manufacturing, distributing, marketing, preparing, and consuming food.
- Determine the critical control points required to control the identified hazards.
- Establish critical limits that must be met at each critical control point.
- Create procedures to monitor critical control point.
- Initiate effective preventative or control measures to take when identifying a deviation while monitoring a critical control point.
- Execute effective recordkeeping that documents the HACCP plan.

Hazard. An unacceptable contamination, survival, or growth of microorganisms of concern to safety, or spoilage, or unacceptable persistence in foods of products such as toxins, enzymes, or histamines of microbial metabolism.

Critical control point. An operation (practice, procedure, process, or location) or a step of an operation, at or by which a preventative measure can be exercised that will eliminate, prevent, or minimize a hazard.

The school food service operation can use the HACCP to monitor and reduce risks by

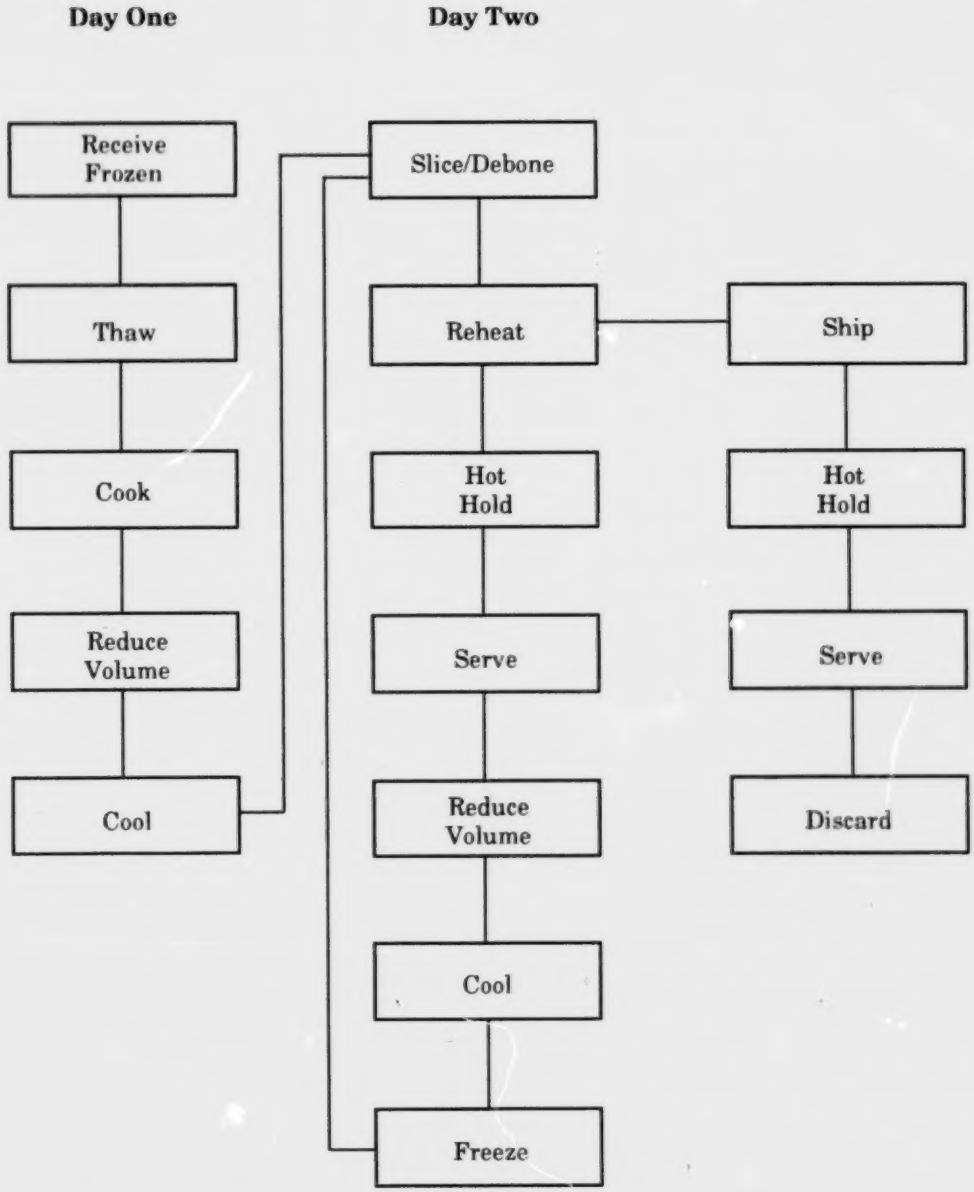
- reviewing the menus and selecting the high-risk foods—menu items requiring advance preparation and prolonged holding periods, such as raw turkey and chicken.
- tracing the items throughout the entire handling and preparation process—from delivery to meal service to identify hazards, criteria for control, monitoring procedure, and action to take if criteria is not met. (See p. 39, an example of a HACCP flow chart for frozen, whole turkeys.)
- after tracing the item, review the plan and the procedures to ensure that the safe food rules have been incorporated.

— Four hours is the longest accumulated period during which potentially hazardous food can remain in the danger zone. This four-hour period spans delivery of the food item until it is served to the customer.

— Two hours is the longest period of time to hold food in the 60°F to 120°F temperature range.

- develop and use a HACCP Inspection Checklist to help identify hazards and implement the appropriate corrective action. (See p. 42 for a sample HACCP Inspection Checklist.)

HACCP Plan for Frozen, Whole Turkeys



Example of HACCP Plan for Frozen, Whole Turkeys

Critical control points	Effective control measures	Monitoring procedure	Action if criteria is not met
Purchase of product: Excessive bacterial contamination by improper handling during processing.	Reputable vendor. USDA inspection requirement.	Inspect food when received to ensure specifications have been met and product is wholesome.	Return product to purveyor, if purchased product. Contact DPI to report problems with commodity item.
Delivery of product: Further contamination and conditions that allow for bacterial growth.	Inspection of delivered product before acceptance and immediate storage under appropriate conditions.	Maintain calibrated thermometers in all cold storage units.	Adjust storage temperatures or contact equipment repairperson. Recalibrate thermometers on routine basis.
Thawing: Insufficient or improper thawing can result in significant microbial growth.	Use approved method(s) and minimize time between thawing and cooking.	Observe thawing method(s). Determine the time period needed to completely thaw product.	Modify thawing procedures.
Cooking: Bacteria survive meat that does not reach sufficient temperature. The spore stage can become heat shocked into the vegetative stage.	Heat until turkey reaches 165°F or above during the cooking process. Use continuous cooking process.	Use calibrated thermometer to ensure temperature requirements are met.	Continue cooking process and adjust time schedules.
Cooling: Bacteria in vegetative stage can grow rapidly in turkey left at "danger zone temperatures" for prolonged periods.	Reduce temperature of cooked product to 70°F in first two hours and to 40°F within a total of four hours by using quick chill methods.	Measure temperature at geometric center at the two- and four-hour time intervals.	Modify procedure during process to ensure turkey product reaches 40°F. Discard product that cannot be cooled within six hours.
Deboning/Slicing: Introduction of bacteria from worker's hands, knives, cutting boards, etc., as a result of cross-contamination.	Wash hands, wear gloves for cuts or burns, monitor for ill employees and infected wounds, wash and sanitize utensils and other food-contact surfaces including equipment.	Observe procedures to ensure turkey is not contaminated during this phase. Check to see that employees limit the amount of product removed from the cooler.	Modify procedures and provide training.

Critical control points	Effective control measures	Monitoring procedure	Action if criteria is not met
Reheating: Slow or inadequate reheating may allow growth of bacteria.	Reheat to 165°F or above as rapidly as possible. Utilize appropriate equipment for this process.	Use calibrated thermometer to obtain accurate readings.	Adjust preparation time. Use batch methods to facilitate quick heating. Heat only what is needed for each serving period.
Holding / Shipping / Serving: Holding food at improper temperatures allows for growth of bacteria. Contamination can result from contact with food servers' hands or serving utensil.	Avoid hand contact; use washed and sanitized utensils; change utensils when replenishing the turkey; maintain product at 150°F or above during shipping, serve immediately after heating. Preheat shipping devices if possible. Develop appropriate delivery schedule.	Observe holding, shipping, and serving periods.	Modify procedures. Adjust packing and shipping schedules.
Leftover: Dangerous levels of bacteria present from prolonged holding present risks for reuse.		Trace product through process. Do not reuse any product that does not meet *safe food rules.*	Discard any product not meeting criteria.

■ Sample Form

Hazard Analysis Critical Control Point System Checklist

Food service facility _____ Date _____
Statements with a "no" response require explanation or follow-up action.

1. Training	Yes	No	N/A	Comments:
Food service personnel with food service preparation and service responsibilities attended a 10-hour sanitation course.	☐	☐	☐	
2. Recipes				
Complete directions are given during the recipe standardization process.	☐	☐	☐	
Directions specify instructions for safe food handling methods during all stages of preparation, holding, serving, and storage of leftover portions.	☐	☐	☐	
Safe thawing procedures	☐	☐	☐	
End-cooking temperatures	☐	☐	☐	
Hot-holding temperatures	☐	☐	☐	
Quick cooling methods	☐	☐	☐	
Limiting exposure of food to "danger zone" temperatures	☐	☐	☐	
Prevention of cross-contamination	☐	☐	☐	
Specific utensils and equipment are specified in the recipe.	☐	☐	☐	
3. Temperatures				
Appropriate thermometers (metal stemmed, product thermometer) are used for checking temperatures of potentially hazardous foods.	☐	☐	☐	

3. Temperatures (cont.)	Yes	No	N/A	Comments:
Employees check product temperatures during holding periods and of the end product.	☐	☐	☐	
Employees know how to use, how to read, and when/how to calibrate product thermometers.	☐	☐	☐	
Equipment thermometers are located in the warmest part of each cold storage unit and are monitored daily.	☐	☐	☐	
All equipment thermometers have been calibrated according to the manufacturer's instructions (including equipment mounted thermometers). Calibration is checked to ensure accuracy during routine maintenance.	☐	☐	☐	
4. Food Source				
Food items are purchased from approved sources.	☐	☐	☐	
Only those items meeting school agency specifications and found to be in suitable condition during inspection at the receiving area are accepted.	☐	☐	☐	
Home-prepared, processed, or canned food are prohibited from use.	☐	☐	☐	
Once served, food items are not served again.	☐	☐	☐	
5. Food Storage				
Dry food storage areas:				
Food items are stored promptly after items are inspected during the receiving process.	☐	☐	☐	
Stock is rotated and inspected for spoilage or infestation.	☐	☐	☐	

5. Food Storage (cont.)	Yes	No	N/A	Comments:
Dented, rusty, or swollen cans are discarded.	☐	☐	☐	
Food items are not stored under exposed sewer pipes.	☐	☐	☐	
Food storage containers NSF- or U.S.-Public-Health-Service approved.	☐	☐	☐	
Food storage containers are properly labeled, cleaned before refilling, and checked for infestation.	☐	☐	☐	
Food items kept covered during storage.	☐	☐	☐	
Food items stored to prevent cross-contamination.	☐	☐	☐	
Food items are stored off the floor (six inches or more) or on mobile racks and dollies.	☐	☐	☐	
Refrigerated storage and holding areas:				
Food temperatures are maintained at a temperature of 40°F or less.	☐	☐	☐	
NSF- or U.S.-Public-Health-Service institutional food storage containers are used for holding potentially hazardous food items.	☐	☐	☐	
Cold storage units are monitored to ensure proper temperatures are maintained (40°F).	☐	☐	☐	
Cold storage units are cleaned (interior and exterior) and maintained according to the manufacturer's instructions.	☐	☐	☐	

5. Food Storage (cont.)	Yes	No	N/A	Comments:
Adequate refrigeration space is available to prevent overcrowding and to allow for air circulation.	☐	☐	☐	
Food items are organized for quick retrieval.	☐	☐	☐	
Raw meat and poultry are stored in separate units or on a shelf separate from items that will not be cooked in a manner that will not allow contamination of food items stored beneath.	☐	☐	☐	
6. Holding of food items				
During cooling hot foods, quick chill methods are taken to lower the temperature of potentially hazardous items to 40°F within four hours.	☐	☐	☐	
Quick chill methods are used to ensure that the temperature of potentially hazardous foods drops to at least 70°F within two hours.	☐	☐	☐	
The temperature of cold foods intended for satellite schools are maintained at 40°F or above until served.	☐	☐	☐	
The temperature of hot foods intended for satellite schools are maintained at 150°F or above until served.	☐	☐	☐	
The temperature of potentially hazardous items are checked during holding periods:	☐	☐	☐	
Before and after delivery to satellite schools.	☐	☐	☐	
After placed in cold storage between advanced preparation and service.	☐	☐	☐	

7. Thawing	Yes	No	N/A	Comments:
One of the four approved methods are used for thawing food items: Under refrigeration. Under running water with temperature of 70°F or below. As part of the cooking process (if the food item weighs less than three pounds or is less than four inches thick). Microwave and cooked immediately.	☐	☐	☐	
Food is thawed to prevent contamination of other food items.	☐	☐	☐	
The temperature of the food item does not exceed 40°F during the thawing process.	☐	☐	☐	
8. Food Handling and Preparation				
Handwashing sink is located in the food preparation area to facilitate frequent and thorough handwashing.	☐	☐	☐	
Paper toweling, soap, and nail brush are located at the designated hand sink.	☐	☐	☐	
Damaged cooking utensils, flatware, and trays are discarded/repaired.	☐	☐	☐	
Measures are taken to prevent accidental or intentional misuse: Amount of each ingredient is specified in recipe. Items removed from original packaging are stored in labeled containers.	☐ ☐	☐ ☐	☐ ☐	

8. Food Handling and Preparation (cont.)	Yes	No	N/A	Comments:
The three categories of chemicals (1) Cleaners and sanitizers, (2) caustic substances, and (3) rodenticides/pesticides are stored in separate areas away from food.	☐	☐	☐	
Only items necessary for the operation of food service are stored on the premises.	☐	☐	☐	
Plants and personal items (purses, coats, medications) are not kept in food storage and preparation areas.	☐	☐	☐	
During large volume food preparation (such as slicing, boning, etc.), employees only remove what can be prepared in a short time from the hot or cold storage units to maintain product temperature.	☐	☐	☐	
Specific and separate areas of the food preparation area and/or specific food contact surfaces (such as cutting boards) are used for (1) raw meat/poultry, (2) fresh produce, and (3) baked goods to prevent cross-contamination.	☐	☐	☐	
Specific instructions are provided for handling, storing, and reuse of leftovers (specific depth of food container, labeling and dating of item, amount of time to elapse between first use, amount of time product was held between 40°F and 150°F).	☐	☐	☐	
9. Cooking and Heating				
All potentially hazardous food items heated to 165°F or above.	☐	☐	☐	
Thermometers are used to check the temperatures.	☐	☐	☐	

9. Cooking and Heating (cont.)	Yes	No	N/A	Comments:
Standardized procedures have been developed to assist the food service personnel with heating of potentially hazardous food items to prevent prolonged holding periods at production and satellite kitchens.	☐	☐	☐	
The heating/cooking process for potentially hazardous foods is not interrupted.	☐	☐	☐	
Batch cooking methods are used to eliminate prolonged holding periods.	☐	☐	☐	
10. Cooling				
Quick chill methods are used to cool items. (See refrigerated storage section of this checklist.)	☐	☐	☐	
11. Reheating of food items				
A thermometer is used to verify that potentially hazardous food items are heated to 165°F.	☐	☐	☐	
The proper equipment is used for rapid heating of food items.	☐	☐	☐	
Foods are not left at room temperature for prolonged periods of time before heating.	☐	☐	☐	
12. Hot holding of food items				
Potentially hazardous food items are held at 150°F or above.	☐	☐	☐	
Potentially hazardous food items are not left in holding equipment for prolonged periods.	☐	☐	☐	
Hot-holding equipment is preheated (if possible) before use.	☐	☐	☐	

12. **Hot holding of food items (cont.)**	Yes	No	N/A	**Comments:**
Hot-holding equipment used for transporting of food is field tested to ensure that it can maintain the temperature of potentially hazardous foods.	☐	☐	☐	
Delivery schedules and work schedules are established and revised to ensure that hot food items are maintained at 150°F.	☐	☐	☐	
13. Food Handlers's Health				
Food handlers are instructed to check with their supervisor when they have cuts, burns, or boils.	☐	☐	☐	
A policy has been established to exclude food service employees with infected wounds, respiratory infection, and food-borne illness symptoms (diarrhea, vomiting).	☐	☐	☐	
14. Personnel policies and practices				
A break area away from food production and storage has been designated for eating, consumption of beverages, and use of tobacco products.	☐	☐	☐	
Unnecessary traffic is prohibited in the food service area by establishing and enforcing a policy that limits access to food service areas.	☐	☐	☐	
Appropriate arrangements have been made for storage of medications, first aid remedies, bag lunches, and other items brought from home, in an area other than the food service facilities.	☐	☐	☐	
Suitable arrangements have been made for coats, purses, boots, and other personal belongings of food service personnel.	☐	☐	☐	

14. **Personnel policies and practices (cont.)**	Yes	No	N/A	**Comments:**
Food service personnel wash hands when beginning their work day, after returning to work after a break, after using the bathroom.	☐	☐	☐	
Frequent handwashing is stressed as an important sanitary measure.	☐	☐	☐	
Plastic gloves are worn.	☐	☐	☐	

Name(s) of individual(s) on the sanitation review team:

Name(s) of individual(s) contacted about problem areas:

Corrective action plan devised with appropriate staff for areas receiving a "no" response.

Date established for second visit to review corrective action taken: _____

Cleaning and Sanitizing Procedures

Customers rate cleanliness as one of the primary reasons for returning to a food service establishment. In addition, effective cleaning and sanitizing will reduce bacteria and other microorganism loads to safe levels.

Cleaning and sanitizing are two separate processes. During the cleaning process, soil (defined as matter out of place) is removed from the surface. The sanitizing process reduces the remaining harmful bacteria and viruses left on the cleaned surfaces. Surfaces must be thoroughly cleaned and rinsed of detergent residue for effective sanitizing. A senseless waste of cleaner and sanitizers occurs when sanitizers are not applied in proper concentrations. Concentrations that are too low are ineffective, while concentrations in excess of what is needed do not achieve any further advantages for cleaning or sanitizing. This practice can be harmful to people and damage the surface of the item being cleaned. According to the public health codes established for food service establishments, the following items must be cleaned, rinsed, and sanitized at specified intervals.

Item	Cleaning and Sanitizing Interval
Tableware (plates, trays, and flatware)	After each use
Kitchenware and food-contact surfaces of equipment	After each use and following any interruption of operation during which contamination can occur
Equipment and utensils used for the preparation of potentially hazardous foods on a continuous or production-line basis	At intervals throughout the day on a schedule based on food temperature, type of food, and amount of food particle accumulation

The following items must be cleaned as often as necessary to keep them free of accumulated dust, dirt, food particles, and other soil.

Item	Cleaning Interval
Food-contact surfaces of grills, griddles, and similar cooking devices and cavities and door seals of microwave ovens. Exception: hot oil cooking equipment and hot oil filtering systems	At least once a day and kept free of encrusted grease deposits and other accumulated soil
Non-food-contact surfaces	As often as necessary to keep the equipment free of the accumulation of dust, dirt, food particles, and other soils

The tables and chairs used by the customers demand attention. Daily cleaning will make it easy to remove food spills. Reduction of the accumulated soil and harmful microorganism load on tabletops is desirable under the following conditions:

- Tabletops used by pre-kindergarten and students with disabilities. These students may consume the food they have dropped onto the table.
- Tabletops heavily used before meal service (for example, as a study or instructional area), and tables used for several meal serving periods.

Cleaning Process

During the cleaning process, visible soil is removed from the surfaces as follows:

- The cleaning agent is exposed to the soil.
- The cleaning solution disperses and suspends the soil.
- Soil is removed from the surface.

The necessary ingredients for the cleaning process are water at the appropriate temperature, suitable cleaning agent, and friction. The cleaning agent serves several functions as it loosens, dissolves, and suspends soil, and provides the necessary friction through chemical and/or physical action. In most instances, detergents are chosen according to specific properties that aid in the cleaning process. These detergents enhance cleaning as specific ingredients remove certain soils or are applicable to special circumstances. Select the appropriate detergent according to the surface, type of soil, the concentration of the cleaning agents and special ingredients, pressure applied to get desired results, and combinations of temperature and time.

Sanitizing Process

The sanitizing process further reduces the remaining harmful microorganisms left on the cleaned surface. This process can be accomplished with hot water or a chemical agent. The factors that affect the action of the chemical agent include the following: concentration, temperature, pH (the degree of acidity or alkalinity), presence of organic material (such as remaining food soils), types of microorganisms, microorganism load, and detergent residue.

Chemical Sanitizers—Which One to Choose

The most popular types of chemical sanitizers used in food service are chlorine (hypochlorites), iodine (idophors), and quaternary ammonium compounds (quats). These chemical sanitizers are

- active against most microorganisms.
- easily dispensed and controlled.
- readily measurable.

The three chemical sanitizers do not react alike under all conditions and for specific uses. Advantages and disadvantages for each type of sanitizer are listed.

A listing of the chemical sanitizers approved by the Department of Health and Social Services (DHSS) can be obtained by contacting the Bureau for Food and Nutrition Services. The trade name, type of sanitizer, concentration, and manufacturer are specified on the list. Remember to follow these important steps when using these chemical sanitizers.

- Measure the chemical.
- Make sure that the temperature of the water meets manufacturer's specifications.
- After chemical sanitizing, air dry dishes and utensils. Since solution temperatures are lower than required for hot water sanitization, the drying time is increased.*

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* Much of this information was obtained from *Programmed Cleaning Guide for Environmental Sanitarians* published by the Soap and Detergent Association.

Chemical Sanitizers

Chlorine

Advantages	Disadvantages
inexpensive unaffected by hard water salts nonfilm forming	can be irritating to skin corrosive on some metals detectable odor less effective in water with high iron content dissipates rapidly (not as chemically stable)

Iodine

Advantages	Disadvantages
more stable than chlorine unaffected by hard water salts non-corrosive prevents film formation spot free drying	not as effective against spores expensive should be used at 120°F or below affected by high alkaline water or soap residue slow acting

Quaternary Ammonium Compounds

Advantages	Disadvantages
very stable, forms bacteriostatic film, prevents and eliminates odors, non-irritating to skin, noncorrosive, stable to temperature changes	germicidal efficiency is selective and varied, expensive, can leave film on surfaces, can cause foam problem in mechanical low temperature dishmachines

Specific areas or conditions where a particular type of sanitizer is recommended because of special chemical properties:

Special Area Condition	Recommended Sanitizer in Order of Preference
aluminum equipment	iodine, quat
hand sanitizer	iodine
hard water	chlorine, iodine
high iron water	iodine
non-corrosive	quat
prevention of film formation	iodine
sanitization of equipment between uses	iodine
sanitization of equipment to be stored	quat
walls	quat
white porous surfaces	chlorine, quat

Manual Dishwashing

Manual dishwashing is a four-step process which should be reviewed and demonstrated to food service employees assigned dishwashing tasks. The sinks in the dishwashing area must be cleaned prior to use.

Step one: Preflush or prescrape and, when necessary, presoak to remove gross food particles and other soil. Follow the precautions described in "Soiled Flatware" on p. 55. Sort and check for any cracked and chipped items and discard unusable items.

Step two: Wash items in hot water (minimum temperature of 110°F) containing the appropriate amount of detergent. Follow the manufacturer's instructions for detergent concentration. Soap dispensers are recommended. Change the wash water often to keep it clean.

Step three: Rinse items free of detergents and abrasive substances with clean water. The recommended rinse temperature is 120° to 140°F. Change the rinse water at frequent intervals.

Step four: Sanitize the items using one of the following methods.

Hot Water Method: Submerge for 30 seconds in clean water continuously maintained at a temperature of 170°F. A thermometer with an accuracy of +/-2°F must be installed or placed in the final rinse compartment. Baskets of the size and design that permit complete immersion must be provided and used. (See p. 56.)

Chemical Method: Submerge for at least two minutes in a bleach solution with a chlorine concentration continuously maintained at 100 parts per million (about two tablespoons per gallon of water) or another approved sanitizing solution. A test kit or other device that accurately measures the parts per million concentration of the solution must be provided and used. Soaps, water softeners, washing compounds, or detergents can interfere with the effectiveness of the sanitizer. For these reasons, such items should not be added to the solution. Some wetting agent products have been approved for use with a sanitizer. All sanitizing solutions must be prepared each day and changed as often as necessary to keep it clean and at the proper concentration. (See p. 57.)

Final step: Air dry.

Mechanical Dishwashing Procedures

The following areas should be included when training employees assigned to operate and care for the dishmachine.

- Operate the machine and devices in accordance with manufacturer's instructions. Consult the manual and the data plate mounted on the dishmachine for temperatures, cycle length, and operating procedures.
- Inspect the dishmachine before each operation. The interior of the dishmachine should be free of debris. Make sure detergent and wetting agent dispensers are full. Ensure that the automatic detergent dispensers, wetting agent dispensers, and liquid sanitizer injectors are in working order. Check the spray arms for clogged water jets.

- Items must be flushed with a water spray, or scraped and, when necessary, soaked to remove gross food particles and other soil before they are racked unless the dishmachine has a prewash cycle.
- Sort items and discard those items that are cracked, broken, or chipped. Place items in racks, trays, or baskets, or on a conveyor, to expose food contact surfaces to the unobstructed application of detergent wash and clean rinse water and permit free draining once the items are removed. Follow the precautions described in the following section, "Soiled Flatware."
- Prevent cross-contamination of clean items by assigning an employee to scrape and load the dirty items and another employee to unrack the clean items. Direct employees to sanitize their hands before unracking clean items if they have been working on the dish return side. A sanitizing solution used for the hands should be twice as strong as solution used for manual dishwashing.
- Air dry all items.
- Thoroughly clean the dishmachine, drain boards, and dish return areas according to the manufacturer's instructions.

Soiled Flatware

School food service personnel should take special precautions with soiled tableware to prevent contamination of their hands and exposure to hepatitis and other infectious agents [HSS 196-10(4)(c)]. Soiled flatware must be sanitized **before** it is handled. Three methods for protecting the dish-room personnel are described below.

1. Safe Procedure—Sanitizing Solution
   - Provide students with a receptacle for placing their soiled flatware. A pre-soak solution can be used to help loosen food particles. However, care must be taken to prevent contact with the soiled flatware and the solution.
   - Add a sanitizing solution to the receptacle before or after students have deposited their flatware. Prepare a sanitizing solution of at least twice the strength used in the manual dishwashing procedure (for example, four tablespoons of bleach per gallon of water). Check with a chemical salesperson or a company representative about adding a sanitizer to the pre-soak product. Detergents and pre-soak products can chemically alter the sanitizer and render it ineffective for eliminating harmful bacteria and viruses.
   - Allow the flatware to remain in the sanitizing solution for at least two minutes. This contact time is needed to kill disease agents. Sanitized flatware is safe to be sorted and made ready for the manual or dishmachine procedures.
   - Follow the prescribed manual or dishmachine cleaning and sanitizing procedures.

2. Safe Procedure—Dishmachine
   - Provide a container for flatware at the dish return area. A pre-soak product can be added to the container to help loosen food particles.
   - Empty the contents of the flatware soak container onto a flat bed rack placed over the garbage disposal.
   - Run the rack of flatware through the wash and rinse cycles of the dishmachine.
   - Sort the flatware into plastic flatware cylinders or compartmented flatware racks.
   - Sanitize the flatware after handling by running it through the dishmachine wash and rinse cycles a second time.

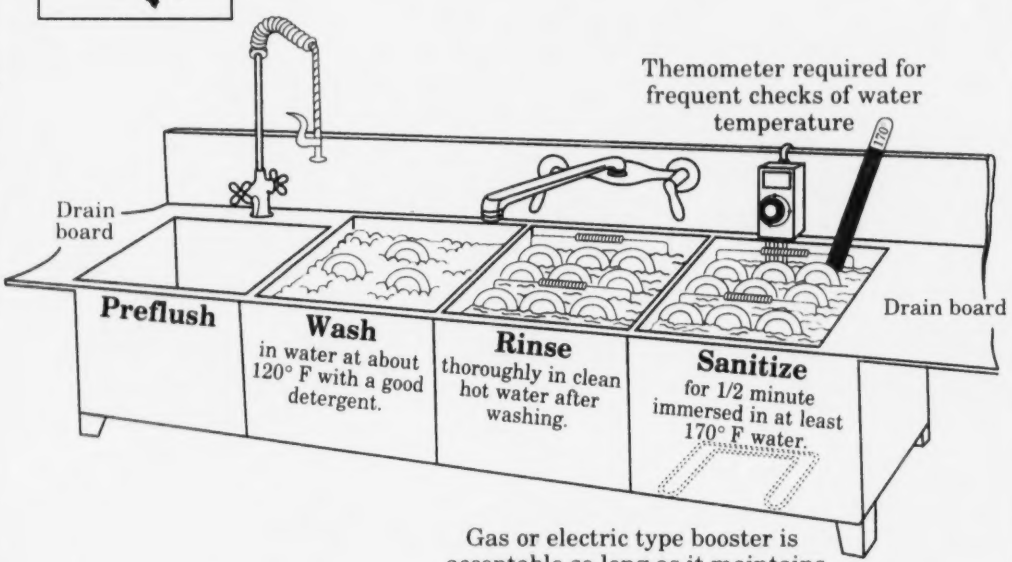
3. Safe Procedure—Gloves
   - Wear heavy-duty latex plastic gloves when sorting or handling flatware. Replace the gloves when they become torn or leak.

Figure 6

Manual Dishwashing
Hot Water Method

Approved Procedure

Preflush
Wash
Rinse
Sanitize


Themometer required for frequent checks of water temperature
Drain board
Drain board
Preflush
Wash
in water at about 120° F with a good detergent.
Rinse
thoroughly in clean hot water after washing.
Sanitize
for 1/2 minute immersed in at least 170° F water.

Gas or electric type booster is acceptable so long as it maintains a minimum of 170° water during operation

Figure 7

Manual Dishwashing
Chemical Method

Approved Procedure

Preflush
Wash
Rinse
Sanitize

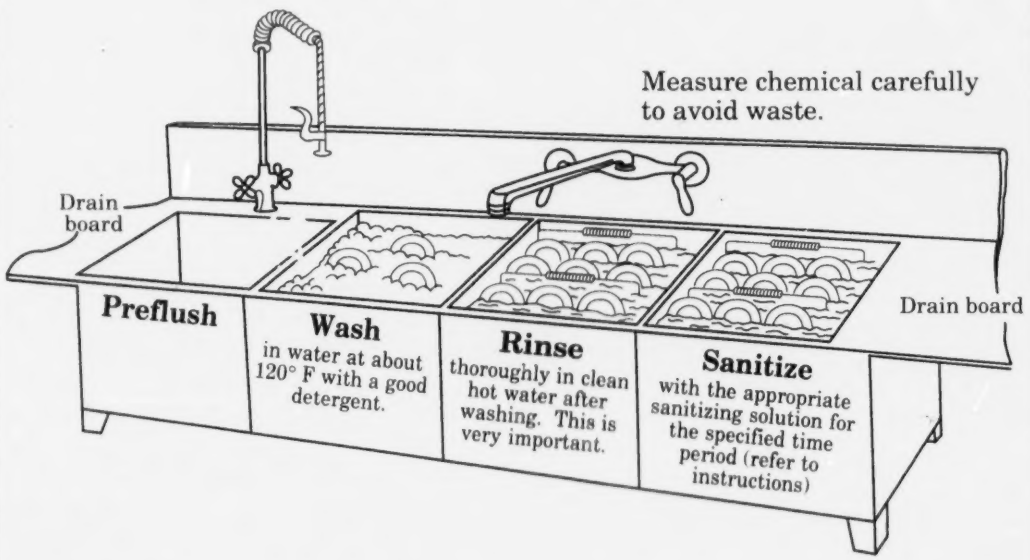

Measure chemical carefully to avoid waste.
Drain board
Drain board
Preflush
Wash
in water at about 120° F with a good detergent.
Rinse
thoroughly in clean hot water after washing. This is very important.
Sanitize
with the appropriate sanitizing solution for the specified time period (refer to instructions)

Figure 8

Some Chemical and Physical Factors Affecting the Dishwashing Process

Symptoms	Possible Cause	Suggested Cure
Soiled Dishes	Insufficient detergents	Use enough detergent in wash water to ensure complete soil suspension.
	Wash water temperature too low	Keep water temperature within recommended ranges to dissolve food residues and to further facilitate heat accumulation (for sanitization).
	Inadequate wash and rinse times	Allow sufficient time for wash and rinse operations to be effective. (Time should be automatically controlled by timer or by conveyor speed.)
	Improper racking or placing	Rack according to size and type.
Films	Water hardness	Use an external softening process. Use more detergent to provide internal conditioning. Use a chlorinated cleaner. Check temperature of wash and rinse water. Water maintained above recommended ranges may precipitate film.
	Detergent carryover	Maintain adequate pressure and volume of rinse water.
	Improperly cleaned or rinsed equipment	Prevent scale buildup in equipment by adopting frequent and adequate cleaning practices. Maintain adequate pressure and volume of water.
Greasy Films	Low pH, Insufficient detergent, Low water temperature	Maintain adequate alkalinity to saponify greases. Check detergent and water temperature.
	Improperly cleaned equipment	Unclog all wash and rinse nozzles to provide proper spray action.
Streaking	Alkalinity in the water	Use an external treatment method to reduce alkalinity.

Symptoms	Possible Cause	Suggested Cure
Foaming	Detergent	Change to a low sudsing product.
	Dissolved or suspended solids in water	Use an appropriate treatment method to reduce the solid content of the water.
	Food soil	Adequately remove gross soil before washing. The decomposition of carbohydrates, proteins, or fats may cause foaming during the wash cycle.
Spotting	Rinse water hardness	Provide external or internal softening.
	Rinse water temperature too high or too low	Check rinse water temperature. Dishes may be flash drying, or water may be drying on dishes rather than draining off.
	Inadequate time between rinsing and storage	Allow sufficient time for air drying.

Care of Melamine and Plastic Trays

Proper care can eliminate problems with discoloration and staining of melamine and other plastic compartment trays. These trays can accumulate surface film and stains from unsuitable cleaning procedures. Effective cleaning and sanitizing procedures will remove soils and reduce the bacteria load without eroding the protective surface of the tray. These procedures will keep the trays looking their best for a longer period of time with a minimum amount of time and effort. Also, special stain and film removal treatments can be eliminated in most instances.

To Avoid Stain and Film Build-up Problems:

- Follow the manufacturer's instructions for care and cleaning of trays.
- Immediately remove blueberry, banana, and other stain-producing soils from the tray or use souffle cups for these foods to minimize contact with the tray.
- Follow dishmachine manufacturer's instructions regarding water temperature, water pressure, dishmachine maintenance, length of wash and rinse cycles, and loading of the dishmachine.
- Obtain an assessment of water conditions (mineral content, hardness) and the type of items cleaned (aluminum, trays, stainless steel) from the chemical supply representatives before selecting cleaners, sanitizers, and drying agents.*
- Use the correct amount of cleaners, sanitizers, and drying agent.
- Follow the four-step manual dishwashing procedure.

— Removal of gross particles of soil by scraping and/or rinsing.
— Wash with a suitable cleaning product.
— Clear water rinse to remove residues from cleaner.
— Sanitize with an approved chemical solution. (Contact the Bureau for Food and Nutrition Services to obtain a listing of the approved sanitizers.)

To Remove Stains on Melamine Trays:

The Prolon Dinnerware Division recommends the following steps for the removal of stains on the melamine trays.

1. Use a sodium peborate type cleaner. "Dip-it," "M.E. Cleaner," and "Nu Ware" are examples of some commercial products on the market.**

2. Mix the cleaner with hot water (minimum temperature of 200°F). The effective concentration is three to five ounces of powder cleaner (dry measure) to one gallon of water.

3. Soak trays in the solution until stain-free. Dishmachine or hand wash to remove chemical residue.

Help for Special Problems. Contact the company or a manufacturer's representative for specific problems or questions regarding the care, cleaning, and sanitizing of trays. Test and

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* **Caution:** Chlorinated dishwashing compounds and sanitizers can destroy the protective melamine surface. Consult the tray manufacturer and the chemical supplier to obtain suitable cleaners and sanitizers and instructions for applications.

** **Caution:** Harsh cleaners (including the stain removal solution recommended and publicized by this Bureau several years ago) and cleansers can destroy the protective melamine/plastic tray surface.

evaluations can be conducted to determine the probable cause and solutions. These tests can include an analysis of the type of cleaner and sanitizer used, dishwashing methods, and/or water conditions.*

Cleaning Schedules

A schedule for routine cleaning of the food service areas can be developed from a survey of the operation by the food service director, supervisor, and employees. (See p. 63.) Once the areas to be cleaned are identified, a cleaning schedule can be written for each piece of equipment and other surfaces such as walls, floors, and ceilings. The cleaning schedule can be based on the answers to the following questions:

1. What needs to be cleaned?
2. Who is responsible for cleaning?
3. What is the appropriate interval?
4. How should cleaning be accomplished?
5. What are the safety and sanitation precautions?

* Information adapted from a directive distributed by the Prolon Dinnerware Division, 2524 Main Place Tower, Buffalo, New York 14202

■ Sample Form

Cleaning Schedules and Procedures

The _____ have established a written cleaning schedule. This
(insert name of school / district)
schedule and the instructions for accomplishing the cleaning assignment will help:

- ensure that the cleaning assignments meet standards on a timely basis.
- evenly distribute the work load throughout the work days and among employees.
- increase the efficiency of the operation.
- minimize maintenance and energy costs.
- provide for a comfortable work environment for the food service employees.
- project a positive image to students and other patrons.

The various assignments for cleaning have been scheduled according to need and to the time available during the normal work day. The cleaning tasks that cannot be accomplished on a day when meals are prepared will be set aside for school vacation cleaning days. The cleaning schedule will designate what cleaning responsibilities have been assigned to each employee. Each employee's name appears on the schedule because cleaning is a part of everyone's job.

Instructions for cleaning equipment items have been prepared. These instructions are based on the equipment manuals and the manufacturer's recommendations concerning proper dismantling and cleaning steps, appropriate cleaning, sanitizing, polishing, and lubrication materials. It is imperative that employees follow the instructions to prevent injury to themselves and harm to the items. The kitchen manager or a designated employee will demonstrate the correct steps for cleaning specific items. Employees will be required to learn how to clean each piece of equipment that they use.

As a safety precaution, employees should immediately clean up any spills that they cause to prevent damage that occurs from contact with foods (especially the high acid foods), as well as decreasing time involved in the cleaning process. Most of the items used each day are cleaned immediately after use because food and other soils are easier to remove at that time.

Food contact surfaces (mixing bowls, cutting boards, knives, etc.) must be cleaned *and* sanitized after each use. The sanitizing method (chemical solution or hot water) will be specified. These items will be sanitized by immersion or by spraying or swabbing with the chemical solution. Nonfood contact surfaces (base of the mixer, counter tops, stove tops, etc.) do not require the sanitizing step.

Weekly Cleaning Schedule for the month of _____

Week	Scrub convection ovens, inside and outside	Scrub walk-in ref. shelves, walls, floors, etc., and reach-in ref. shelves, walls, doors, etc., inside and outside	Scrub range, steam kettle, dishmachine, slicers inside and out as well as *area* all around each	Scrub range, steam kettle, slicers inside and as well as area all around	Scrub all kitchen carts, shelves, and stands in the kitchen area; reorganize	Reorganize, sweep, clean shelves, and scrub storage areas	Reorganize serving area or clean and scrub all equipment inside and out and the floors in serving area(s) and dish return area
Sample May 3-9	Person assigned / Initial and Date	Mary MS 5-4	Joan [illegible] 5-5	Laura [illegible] 5-5	Sue [illegible] 5-3	Vicki VR 5-7	Sandy [illegible] 5-8

Chemical Use

The chemicals used in the school food service area can be hazardous to employees and customers. Careful storage and use of chemicals will prevent serious illness, injury, or property damage that can result from mistaken identifications, chemical interactions, and contamination from spills or from taste and odor absorption. The following safe handling and storage rules apply to detergents, sanitizers, cleaners, insecticides, and rodenticides.

1. Read and follow the instructions provided on the label and by the supervisor.

2. Use the amount specified. Increasing the concentration will not improve the effectiveness of the chemical, and toxic residues can present a hazard.

3. Observe the safety precautions and the regulations that apply to the handling, storage, use, and disposal.

4. Do not mix chemicals without seeking the advice of the manufacturer or supervisor.

5. Store only those items necessary for food service area maintenance, cleaning, sanitizing equipment and utensils, and controlling insects and rodents. Periodically check the chemical inventory and properly dispose of those items no longer in use.

6. Distinctly label all containers of chemicals for easy identification of contents.

7. Store all chemicals in an area away from food, food equipment, utensils, or single-service articles such as straws, napkins, and disposable trays.

8. Store the following categories of chemicals in a physically separate place:
   a. Insecticides and rodenticides
   b. Detergents, sanitizers, and related cleaning or drying agents
   c. Caustics, acids, polishes, and other chemicals

9 Keep poisonous or toxic materials in locked cabinets or in a similar physically separate place used only for chemical storage.

10. Designate the nurse's office or the school office for storage of medications. Prohibit the storage of medications in the food storage, preparation, or service areas.

11. Store first aid supplies to prevent contaminating food and food-contact surfaces.

12. Comply with Wisconsin's "Employee Right to Know" law (Wisconsin Statutes 101.58 - 101.59) that requires school agencies to provide employees with notification, information, and training regarding the chemical substances that employees will come in contact with on the job. Keep material safety data sheets on each product to comply with Occupational Safety and Health Administration (OSHA) standards. (See Appendix B.)

13. Meet the Department of Industry, Labor, and Human Relations (DILHR) licensing requirement for those employees applying and using pesticides or contract with a reputable pest control firm.

14. Comply with the Superfund Act, the Clean Water Act and amendments, the Water Pollution Control Act, and the federal, state, and local laws that apply for handling, storage, transportation, and disposal of waste. Seek assistance from DILHR and the local CESA office.

CAUTION: KNOW YOUR CLEANERS

DON'T MIX Chlorine bleach with

toilet bowl cleaners

ammonia

lye

rust remover

vinegar

oven cleaner

Don't mix chlorine with any other cleaning agent

Solid Waste Management

Wisconsin's new recycling law has prompted food service managers and directors to evaluate the quantity of solid waste generated by the food service operation and the waste disposal methods. Although well-intended, measures taken to reduce the solid waste created by the food service program may have negative effects on the environment and sanitation.

The food service area may be responsible for only a fraction of the total solid waste generated by the school. An effective solid waste management program involves everyone throughout the school agency. In addition, the school agency must take into consideration a variety of factors when developing their waste management program, such as

- the composition of the waste.
- various laws, restrictions, and ordinances established by state, federal, and local agencies.
- solid waste disposal options.
- recycling options.
- storage space for recycled items.
- safety, sanitation, and pest control.
- costs of the options.
- other available resources that will shape the course of action.

Varied circumstances will result in an individualized waste management program for each school agency but any program will require school policy and individual behavior changes. The five methods for solid waste disposal include

- landfilling,
- recycling,
- source reduction,
- incineration, or
- composting.

Each method has its advantages and disadvantages. School agencies can devise a workable plan after making a thorough study of their unique situation.

One of the first steps to take when devising the waste management system program is to contact the municipal or county board to find out what is happening on the local level. The Wisconsin Act 335, aimed at helping local communities start and expand programs that reduce, reuse, and recycle wastes, has designated the municipality as the responsible unit for handling local recycling activities and for receiving grants from the state. An exception is made for the county board of supervisors that have adopted a resolution designating the county as a responsible unit. Provisions with the Wisconsin Act 335

- encourage the development of recycled materials and markets for these items.
- modify the Commercial Building Code to require adequate space for the separation, temporary storage, and collection of recyclable materials.
- restrict the type of packaging used for products.

In addition the law modifies the state's policy statement on solid waste management. Now, the options (from most to least desirable) comprise:

1. waste reduction
2. reuse
3. recycling
4. composting

5. incineration with energy recovery
6. land disposal
7. incineration without energy recovery

Considerations during the development of an effective solid waste management plan include:

- using disposable items carefully wherever and whenever possible and using recyclable disposable items. The use of disposables can be justified in some instances (the sanitary service of food and water, waste water management restrictions, costs of other options, and other measures taken to reduce solid waste in the school setting).
- requesting assistance from the food and supplies vendors and manufacturers to provide specifications for recycled products or products that can reduce the amount of solid waste. Examples follow:
  - items in returnable plastic tubs instead of cardboard boxes.
  - thinner disposable containers with the necessary features (strength, appropriate response to heat, etc.).
  - products with the least amount of packaging (plastic pouch versus half-pint carton of milk).
  - equipment and cooking utensils with a long service life.
  - recycling services such as collecting empty cardboard boxes when making deliveries.
  - reducing the number of dumpsters, recycling containers, and garbage bags and minimizing the amount of storage space.
- recycling cardboard boxes, polystyrene, plastics, paper, and cans. Schools are discouraged from purchasing food items in glass bottles because of the safety risks for food service employees and students.
- determining suitable uses for the bulk containers such as pickle pails, cherry tins, and plastic food containers. Although these items do not meet the specifications for food storage once the contents are emptied, custodial staff, teachers, local businesses, and community members can find suitable uses. (For example, they can become paint cans, trash containers, scrub pails, and planters.)
- using student groups to assist with recycling, composting, compacting, and other solid waste reduction and education projects.
- using non-aerosol and nontoxic cleaners and sanitizers whenever possible. The posting of written instructions in work areas and supervision of the use of these products will also help to reduce waste and prevent groundwater contamination.
- developing routine cleaning, maintenance, and repair schedules to lengthen the life of equipment.
- encouraging students and employees to
  - take one napkin and only the eating utensils that they will use to reduce the amount of trash and warewashing.
  - sort their wastes and use the appropriate recycling bins and containers for the incineration items.
  - compact recyclable and disposable items (stacking or crushing) to minimize the amount of space needed for storage and to reduce the number of garbage bags, trash containers, and dumpsters.
  - reduce food wastes by taking only what they intend to eat and the planned portion sizes when choosing the school meal and packing the appropriate quantity of food when bringing lunch from home.
  - select and pack snacks and bag lunch items that contain minimal amounts of packaging but take necessary precautions with potentially hazardous food items.

• publishing the school-wide solid waste management program and promoting the program by educating students, employees, and community. The necessary behavior changes will occur when individuals recognize the importance of recycling and understand what must be done.

A proactive school-wide approach to solid waste management will achieve the goals of the Wisconsin Act 335—recycle, reuse, and reduce waste to preserve precious resources.*

Equipment Preventative Maintenance

A very large investment has been made in the equipment for any food service operation. The return on the equipment investment can be realized if preventative maintenance schedules are rigidly followed. Preventative maintenance involves the development of a routine schedule for the cleaning, adjustment, lubrication, repair, service, and inspection of food service equipment. The objectives of a school food service preventative maintenance program include

- operating equipment at its maximum efficiency.
- attaining the life expectancy for each equipment item.
- preventing unscheduled down time and the adverse effect on unrelated equipment components. (The breakdown of the hot water heater affects the dishmachine operation.)
- minimizing utility costs involved with equipment operation.
- allowing administration to determine whether it is more economical to repair or replace an item.

Preventative maintenance, in its simplest form, involves good housekeeping. Wiping up and removing spills when they occur will extend the finish and the efficiency of equipment. The acidity of most foods can erode stainless steel. Food debris lodged in the rubber seals of refrigeration and freezer units allow cold air to escape and warm air to enter.

Some equipment items, such as slicers, must be disassembled and cleaned according to the manufacturer's instructions after each use. In addition, the food contact surfaces (for example, blade, blade guard, holder, chute, and receiving tray of the slicer) must be sanitized after cleaning.

The manufacturer's instruction manual will describe the necessary procedures and a timetable for completion of these tasks. The routine maintenance tasks and repairs that must be completed by a qualified technician are also stated in the manual.

The first step in developing the equipment preventative maintenance program is the identification of any equipment that requires periodic inspection and maintenance. In the following pages, there are several sample forms and lists to help develop a preventative program. A Sample Equipment Maintenance Card (p. 74) should be on file for each piece of equipment to enable the person responsible for equipment maintenance to schedule appointments for routine inspection and maintenance.

The preventative maintenance checklist will assist the service representative and maintenance staff with scheduling and documenting the repairs and preventative maintenance visits made.

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* Information pertaining to the recycling laws, recycling activities, study guides, and resources can be obtained from the Department of Natural Resources at the following address:
Recycling Education Coordinator (608) 266-2711
D.N.R., IE/4
Box 7921
Madison, WI 53707-7921

Instructions for Cleaning Procedures Form

1. Fill in the name of the equipment.

2. List
   - Supplies needed
   - Cleaning and sanitizing products (specify concentration)
   - Approximate time it takes
   - Frequency of cleaning

3. Complete the "What to Do" and "How to Do It" columns.
   - Include the steps necessary for dismantling, cleaning, sanitizing, and reassembling.
   - Include the safety precautions necessary to make the equipment safe to clean.

Food contact surfaces of equipment must be washed, rinsed, and sanitized after each use *and* following any interruption of operation during which contamination can occur. Also, food contact surfaces of equipment used for the preparation of potentially hazardous foods on a continuous basis need to be washed, rinsed, and sanitized at scheduled intervals throughout the day. The schedule should be based on the food temperature, type of food, and amount of food particle accumulation.

Cleaning Procedures

Cleaning Instructions For Food Slicer
(Name of Equipment)

Supplies Needed	Cleaning and Sanitizing Products Needed *(Specify the correct amount to use)*
Three cloths One-gallon bucket One-quart spray bottle Table knife	Cleaning agent (specify name and amount) Water (specify amount) 1 Tbsp. Bleach Rust Preventative: Amount needed to moisten cloth

Approximate time needed for cleaning: 20 minutes
Frequency for cleaning: After use
Who to contact if you have questions: Sylvia Weeks

What to Do	How to Do It
1. Remove parts	1. a. Remove electric cord from socket. b. Set blade control indicator at zero. c. Loosen knurled screw to release; remove meat holder and chute. d. Grasp scrap tray by handle; pull away from blade; remove. e. Loosen bolt at top of knife guard in front of sharpening device; remove bolt at bottom of guard; remove guard. f. Remove two knurled screw nuts under receiving tray; remove tray.
2. Clean knife	2. a. Wash circular surface with hot detergent solution; rinse; dip in sanitizing solution; dry. DANGER: Keep clear of knife edge. b. Wring out cloth dipped in cleaning solution, bunch thickly and wipe entire circumference of blade, wiping from center toward edge of blade; rinse; spray with sanitizing solution; dry with bunched cloth.

(Continued)

What to Do	How to Do It
3. Clean and replace guard	3. a. Wash knife guard in cleaning solution; rinse; spray with sanitizer; dry. b. Replace knife guard. c. Tighten bolt at top; insert and tighten bolt at bottom. DANGER: Replace knife guard as quickly as possible to prevent injury.
4. Clean other parts	4. a. Immerse in cleaning solution: 1. Meat holder and chute. 2. Receiving tray. b. Wash; rinse; sanitize; dry.
5. Clean beneath receiving tray	5. a. Wash surface below receiving tray with cleaning solution; rinse; dry. b. Apply very thin film of rust preventative to any exposed metal under receiving tray.
6. Clean frame and base	6. a. Wash frame with cleaning solution, rinse, dry. b. With table knife, push damp cloth under base of slicer; pull cloth through to remove food particles.
7. Replace parts	7. a. Replace meat holder and chute; tighten knurled screw. b. Replace scrap tray. c. Replace receiving tray; replace and tighten two screw nuts under tray.

Sample Form

Cleaning Procedures

Cleaning Instructions For _____
(Name of Equipment)

Supplies Needed	Cleaning and Sanitizing Products Needed *(Specify the correct amount to use)*

Approximate time needed for cleaning:
Frequency for cleaning:
Who to contact if you have questions:

What to Do	How to Do It

Sample Form

Equipment Record Card

The equipment record card serves many purposes. It provides the school agency with an inventory, the specific location and description of the food service equipment items, and a record of equipment maintenance and repair. One card should be kept on file for each equipment item.

Equipment Record Card (front)

Item		Trade Name		Location	
Model No	Serial No.	Purchase Price	Date Purchased ☐ Used ☐ New	Date Installed	Life Expectancy
Warranty Period			Free Service Period		
Manufacturer				Telephone	
Address					
Dealership				Telephone	
Address					
Salesperson				Telephone	

Equipment Record Card (back)

Specifications

Spare Parts to Keep on Hand

Part Name	Mfr. Part No.	Stock No.	Quantity

Repair Record

Date	Work Performed	Person/Firm	Cost	
			Parts	Labor

Sample Form ■

Preventative Maintenance Checklist

School _____ Address _____

Dishwasher
- ☐ Lubricate all points
- ☐ Change oil in transmission (once a year)
- ☐ Check pump assembly for leaks
- ☐ Check pump impeller
- ☐ Check pump pressure
- ☐ Check manifolds for play
- ☐ Check spray tubes
- ☐ Check and clean rinse nozzles
- ☐ Check final rinse lever
- ☐ Check drain and overflow
- ☐ Check fill valve washers for leaks
- ☐ Check rinse rapid action valve
- ☐ Check conveyor for tension and adjustment
- ☐ Check curtains (2 complete sets)
- ☐ Check door cables and pulley
- ☐ Check thermometers
- ☐ Check scrap trays
- ☐ Clean pump intake screen

Convection Oven
- ☐ Lubricate all points
- ☐ Check chamber seal
- ☐ Check timer
- ☐ Replace defective bulbs
- ☐ Check and adjust door tension

Slicers
- ☐ Sharpen blade
- ☐ Lubricate all points

Food Chopper
- ☐ Hone blades
- ☐ Tighten and adjust knives
- ☐ Lubricate all points
- ☐ Check hydraulic system
- ☐ Check for play in shaft
- ☐ Check brushes

Food Chopper (continued)
- ☐ Check bowl rotation
- ☐ Clean and lubricate under bowl and top of plate

Knives
- ☐ Sharpen and hone all knives except Wearever Serrated

Steamers
- ☐ Drain, clean, flush, and refill boiler
- ☐ Check safety valves
- ☐ Check door gaskets
- ☐ Lubricate handwheel shaft
- ☐ Check thermostatic vent
- ☐ Replace hand hole gasket
- ☐ Check muffler

Can Opener
- ☐ Check blades
- ☐ Check gears
- ☐ Lubricate
- ☐ Leave (1) extra blade

Stock Kettle
- ☐ Drain, flush and refill with rust inhibitor
- ☐ Check safety valves

Refrigeration Units
- ☐ Clean condensers and unit
- ☐ Lubricate all points
- ☐ Check belts, condition, tension, and alignment
- ☐ Check head and back pressure
- ☐ Check sight glass for proper charge
- ☐ Check gaskets on water-cooled condensers
- ☐ Check oil in compressor body
- ☐ Check tubing brackets
- ☐ Check and eliminate tubing rub

Refrigeration Units (continued)

- ☐ Check door gaskets for condition and seal
- ☐ Check door hinges and latches
- ☐ Check door locks
- ☐ Clean all fixture drains
- ☐ Oil condenser fan motor
- ☐ Check fan blades for alignment
- ☐ Note if suction line insulation is needed

Note: Pump down all open units on the spring check; electrically disconnect all others

Mixer or VCM

- ☐ Lubricate
- ☐ Check for oil leaks
- ☐ Remove broken whip wires
- ☐ Check switch
- ☐ Check blades
- ☐ Check lid gasket

Disposal

- ☐ Lubricate all points
- ☐ Check for sharpness
- ☐ Check seats for leaks
- ☐ Check flow switch and rapid action valve

Ventilation System

- ☐ Oil fan motor
- ☐ Replace filters (if necessary)

Equipment Maintenance

_____	_____	_____
(Signature of Service Representative)	(Signature of School Representative)	(Date)
_____	_____	_____
(Signature of Service Representative)	(Signature of School Representative)	(Date)

Equipment Safety

Selection of Food Service Equipment

The following equipment rating list will assist the food service management with purchasing equipment items that are safe to operate, easy to clean, meet sanitation standards, and accomplish the work for which the items were designed. These checklist items can be included in the written equipment specifications.

1. Does the equipment item meet certification standards of applicable professional testing groups?

   Sanitation:
   National Sanitation Foundation (NSF approved)
   U.S. Public Health Service

   Electrical wiring, switches, displays, etc.:
   Underwriters' Laboratories (UL)

   Gas Equipment:
   American Gas Association (AGA)

   Steam Equipment:
   American Society of Mechanical Engineers (ASME)

2. Are guards provided for sharp edges and moving parts?

3. Do the equipment finishes provide satisfactory cleanability and serviceability?

4. Is the item easy to operate?

5. Have corners and edges been rounded?

6. Are gaskets, blades, and other equipment components easy to replace and to clean?

7. Are drawers, bins, blades, and other parts easy to remove for cleaning?

8. Do drawers and bins have limits and stops?

9. Are bolts and screws countersunk and welded to metal?

10. Is the equipment of the appropriate size, capacity, and material content to meet its intended use?

11. Is the equipment item free of crevices, trim, etc., that can collect soil or harbor insects, rodents, or other pests?

12. Is the equipment designed for balance? Are the feet, frame, and floor adequate to support the weight of the equipment?

13. Will the drawers slide freely when loaded? Are hinges adequate for the size and weight of the door?

14. Is the dealership or the manufacturer willing to assist the school agency with training food service employees how to operate, clean, and service the equipment item?

Installation of Food Service Equipment

Equipment must be installed according to the manufacturer's specifications and meet state and local safety and sanitation codes. Misalignment and improper hook-ups with water or the power source may cause enumerable difficulties with the operation, maintenance, and safe use of the equipment item.

Use of Equipment

On-the-job training is necessary in order to teach food service employees how to properly operate and maintain the many types of sophisticated equipment used in food service. The manufacturer's authorized representative or dealership and the equipment manual can assist the school agency with appropriate training.

Equipment Safety: Slicers

Note: Please use this format to develop safety instructions for each piece of equipment.

- Check cord for frays or damage before plugging it into a convenient outlet.
- Be sure that guards are in place and the machine is properly set to operate before starting the slicer.
- Do not start slicing until you have arranged all food items to be sliced, cleared the immediate area around the slicer, and gathered the containers for the sliced items.
- Put the food guard over the item being sliced. Never use your finger to hold the object in place.
- Always slice the food item using an even swing motion when the slicer is in manual mode.
- If food becomes lodged under the guard, shut off the motor and place the blade gauge at "0."
- In automatic mode, follow all instructions to avoid the slicer jumping out of start and back to you too quickly. Stand back out of the carriage path of the slicer.
- Never leave the machine running without attention. Shut off power even if you must leave for only a moment.
- If the machine is not functioning properly, stop operation and notify the supervisor immediately.
- Pay close attention to your job when operating the machines; a moment of distraction could result in an accident.
- Always return the slicing machine table to the zero position when you have finished using the machine; this will prevent injury during clean-up of the machine.
- When cleaning the slicer, follow the instructions provided by the supervisor, use extreme caution, and wear mesh gloves.
- Only authorized personnel are allowed to sharpen the blades.

Suspected Food-Borne Illness Policy

School agencies can be better prepared to handle a rare but unsettling food-borne illness if they develop written procedures and share them with the appropriate school personnel. The local health department, responsible for a food-borne illness investigation, and the legal counsel for the school agency are valuable resources. The written procedures should contain the following provisions:

- Caution all school employees to refrain from making any assumptions about a suspected food-related illness and the cause. Any comments or statements made to parents, press, or concerned citizens should be approved by the school spokesperson designated to handle this situation.
- Record the name of any individual reporting a suspected food-related illness to the school and the specific date and time the notification was received. The person or people affected may be contacted to learn more about the illness.
- Immediately notify the local health department of the suspected food-borne illness. Volunteer all information requested. The health department will request the following:
  - — The nature of the illness reported. The department will need to know about the symptoms, both their severity and duration; approximate time when the illness occurred and when it was reported; number of individuals affected; and names of the affected people who may be interviewed to learn more about the illness and its cause.
  - — A list of the food items served during the past 48 hours. The authorities will instruct the school about placing the suspected item in hold status.
  - — A list of the food service employees, student workers, or volunteers that prepared or served the meal. These individuals may be interviewed about their health status (communicable diseases, acute respiratory infections, infected cuts, or boils). Also, these individuals will be asked about their food handling techniques and the condition under which the food items were prepared and served.
- The health department will attempt to determine whether the illness is food related and if the illness was caused by consuming a meal cooked by school food service employees.
- Immediately report the incident to the Wisconsin Department of Public Instruction, Bureau for Food and Nutrition Service. The sanitation specialist, familiar with the operation of school food service, will offer assistance.
- Respond to the inquiries made by the parents and employees and the press. A suspected food-borne illness outbreak will attract attention and rumors will quickly circulate. The school agency should not attempt to cover up the incident. Instead, the designated spokesperson should inform the concerned individuals and the news media of the action taken to investigate the cause of the illness.
- A news release should be made at the end of the investigation to reveal the findings. The local health department may or may not be successful in determining the cause of the illness. Food samples are not always available or in a condition suitable for testing or laboratory analysis. In some cases, a virus, incubated in a warm classroom and easily spread in such a confined area, is the cause. Food-borne illness may be suspected because the symptoms appeared after lunch.
- Implement the course of action outlined in the health department's report of the food-borne illness investigation.

Release of Public Information

A suspected food-borne illness outbreak involving school children will attract local news media attention. School agencies should exercise care when releasing public information on any outbreak.

- All employees, when contacted by the press, should be advised to refer questions or statements to a designated person.
- The designated officials should not attempt to cover up the incident but respond with the best available information to inquiries made by the press, parents, and employees.
- The school officials, with the assistance of the local health authority, may want to prepare a press release and notify the parents of the investigative findings.

Injuries and Accidents

Accidents and injuries in the school food service area occur in spite of a well-developed safety program. The school agency can prepare staff for an unsettling event by developing injury procedures, and familiarize the staff with the policy. Sample injury procedures can be found in this section. Information about accidents and injuries involving students or staff can provide the agency with necessary documentation for worker's compensation, other insurance claims, and liability claims. In addition, Wisconsin Administrative Code Chapter 200 requires the school agency to file a specific report. This section focuses upon the importance of an accident analysis report (see p. 86). Information compiled from the reports can help the school agency with accomplishing safety objectives by identifying systems, methods, and programs for determining the cause, costs, and injuries. According to the Wisconsin School Safety Coordinators, the accumulated information detailed in an accident analysis report serves as a basis for

- curriculum guidance and in-service training to educate children and staff about safe living.
- routine and realistic evaluation of safety program efforts.
- modifications to the building structure, facilities, equipment, or procedures to improve the environment.
- organizational and administrative improvements to strengthen the management of the safety program.
- public relations program that includes timely release of accurate information.
- assessment of the costs of accidents and injuries and their relationship to the operating budget.

Injury Procedures

Injuries to an Employee

1. All injuries, no matter how slight, shall be reported immediately to your supervisor.

2. The supervisor will arrange for emergency transportation when required and accompany the injured.

3. The supervisor shall complete the official accident report form and route as directed on the form.

4. First aid, artificial respiration, and rescue breathing shall be performed only by trained personnel and only in an emergency until medical help can be obtained. School agencies should obtain a legal opinion when establishing a policy for administering medical attention to a student employee.

Injuries to a Student

1. Seek immediate emergency medical attention for life-threatening injuries. First aid, artificial respiration, CPR, and the Heimlich maneuver shall be performed only by trained personnel and only in an emergency until medical help can be obtained.

2. Obtain the name of the student, the name of his or her teacher, and witnesses.

3. Notify your supervisor and/or _____.
   (specify the names or titles, for example, school office, school nurse, classroom teacher)

4. Complete (with supervisor's assistance) the accident report.

Accident Report Policy

All accidents and injuries occurring on school grounds or while under school supervision shall be reported immediately to the supervisor. The supervisor must complete and submit an accident report to _____. The detailed report must include actions
(*name of person*)
taken at the time and any other pertinent information regarding the accident. Copies of the report shall also be forwarded to _____
(*name or title of person(s); for example, principal and /or personnel office*)
and _____.
(*the district safety coordinator*)

The accident and injury data will be compiled and used as a basis for

1. Evaluating the safety program efforts.
2. Identifying training needs.
3. Determining changes for building structures and facilities, or procedures.
4. Improving organization and administration of the safety program.
5. Assessing the accident and injury costs and the impact on the operating expenses of the food service program and school agency.
6. Educating the student about safety issues.
7. Maintaining a positive relationship with parents and the community.

The information provided on the form will help the individuals responsible for accident investigation to design effective accident prevention measures.

Thank you for your cooperation.

Accident Investigation and Analysis

Accident investigation and analysis prevents accidents. The accident analysis will help the food service unit

- learn accident causes so that similar accidents may be prevented through mechanical improvement, better supervision, employee training, or changes in procedure.
- determine if a change in procedure produced an error that in fact resulted in an accident.
- publicize the particular hazard among employees and their supervisors and possibly prevent similar accidents from occurring in the future.

For purposes of accident prevention, the accident analysis must be fact-finding, not fault-finding. When gathering information for accident investigation and analysis, certain key facts must be identified about each injury-related accident. The facts, recorded on the Accident Investigation Report, can be easily summarized to show general patterns of injury and accident occurrence. These facts include:

1. *Nature of injury.* What was the injury?

2. *Part of body.* What part of the body was affected by the injury named in (1)?

3. *Source of injury.* What object, substance, exposure, or bodily motion inflicted the injury?

4. *Accident type.* How did the injured person come in contact with the object, substance, or exposure?

5. *Hazardous condition.* What hazardous physical or environmental condition or circumstance caused or permitted the occurrence of the event?

6. *Location of accident.* Where does the hazardous physical or environmental condition exist?

7. *Jurisdiction of accident.* Who has responsibility for the specific area where the accident occurred?

8. *Errors.* What unsafe act of a person caused or permitted the occurrence of the event? Contributing factors should be noted when they can be determined.

Information for this report can be obtained from:

- Accident reports
- Witnesses

An analysis of the information obtained during the investigation will produce the following results:

1. Identify and locate the principal sources of accidents, the materials, machines, and tools most frequently involved in accidents and the jobs most likely to produce injuries.

2. Disclose the nature and size of the accident problem in the food service area.

3. Indicate the need for engineering revision by identifying the principal unsafe conditions of various types of equipment and materials.

4. Disclose inefficiencies in operating processes and procedures, for example, where poor layout contributes to accidents.

5. Disclose the unsafe practices which need special attention in the training of employees.

6. Disclose problems with placement of personnel in specific jobs or functions.

7. Bring about compliance with federal and state requirements.

Sample Form

Accident Analysis Report

Case Number

Name of person injured

Where did it happen? *Specific area*

What is the extent of the injury? *Specific parts of body*

When did it happen? *If known*
Date Time ☐ AM ☐ PM

Estimated time
Date Time ☐ AM ☐ PM

When was injury reported?
Date Time

Person reporting injury

Indicate acts and/or conditions which contributed to causing this accident

Human errors involved

- ☐ Operating without authority
- ☐ Failure to warn or secure
- ☐ Operating at unsafe speed
- ☐ Making safety devices inoperative
- ☐ Using defective equipment, tools, materials, or vehicles
- ☐ Failure to use personal protective equipment
- ☐ Failure to use equipment provided (except personal protective equipment)
- ☐ Poor housekeeping
- ☐ Unsafe lifting and carrying (including insecure grip)
- ☐ Horseplay
- ☐ Others *Explain*

Unsafe conditions

- ☐ Defective equipment, tool, material, substance
- ☐ Congested work area
- ☐ Inadequate warning system
- ☐ Fire and/or explosion
- ☐ Hazardous atmospheric conditions
- ☐ Excessive noise
- ☐ Radiation exposure
- ☐ Inadequate ventilation
- ☐ Poor workplace layout
- ☐ Sharp/rough/frayed/cracked edges. What?
- ☐ Inadequate lighting
- ☐ Water, liquid in walkway. Where?
- ☐ Foreign object in walkway. What?
- ☐ Unexpected movement. By what?

Has this problems(s) been previously reported? ☐ Yes ☐ No

Is this the employee's regular job? ☐ Yes ☐ No

Who trained the injured employee on this job? When?

Has action been taken to prevent this from happening again? ☐ Yes ☐ No

What?

In your judgment, what is the likelihood of this accident occurring again? *Circle one*

1	2	3	4	5	6	7	8	9	10
Almost none				50-50					Almost certain

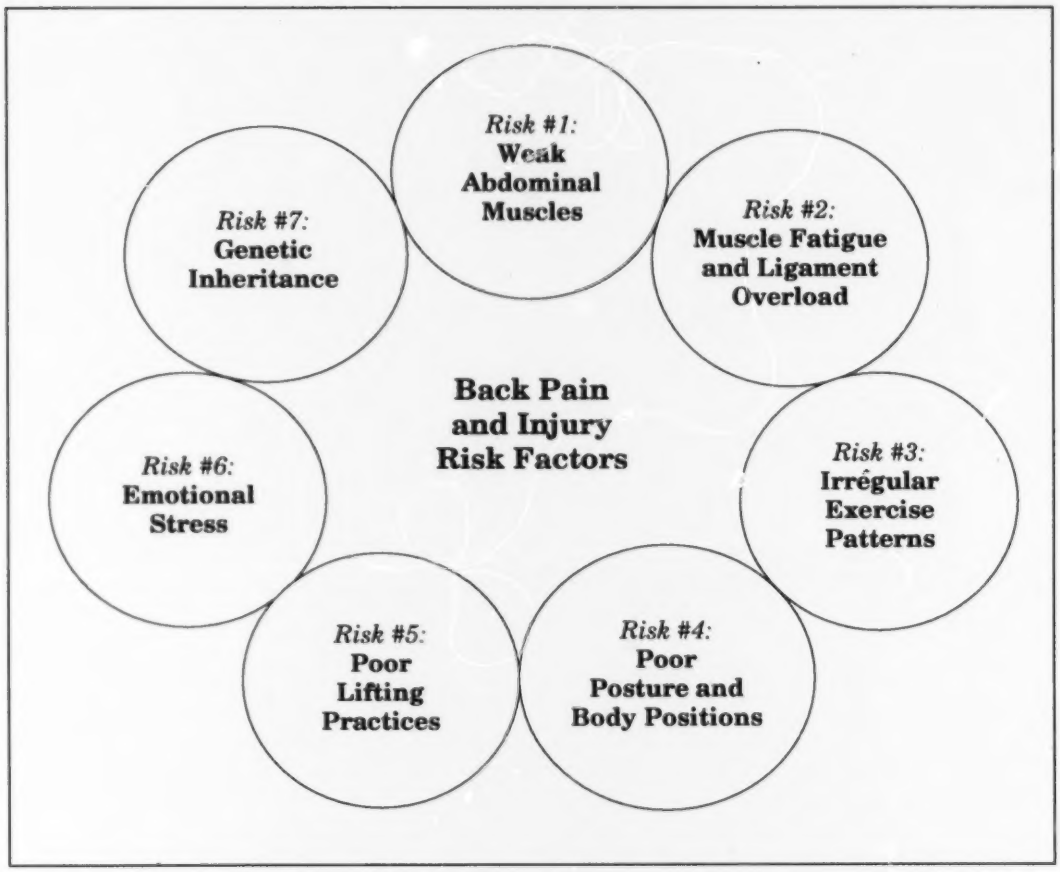
Prepared by

Date

Back Injuries

Back pain and injury is one of the most common problems faced by food-service employees. Yet this injury can be prevented. The seven risk factors associated with back injury susceptibility are shown below:

Figure 9



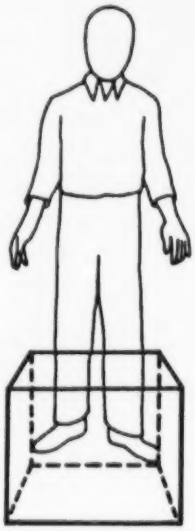
The chance for an employee to experience a serious and painful back problem increases with the number of risk factors. Of the seven mentioned, all but genetic inheritance are within the employee's control. Management can help the employees protect their backs by

- establishing specific Wisconsin Department of Industry, Labor, and Human Relations standards regarding weight restrictions and enforcing these standards.
- conducting in-service sessions to encourage interest in stretching, flexibility, and conditioning exercise programs as well as stress reduction and relaxation techniques.
- including proper lifting techniques (see Figure 10) as part of employee orientation.
- working with employees to identify and eliminate back strain and overload situations. Specific examples include

— overextending reach across a wide serving counter to place items on the student's tray.
— lifting and stacking or retrieving cases of canned goods without assistance from another employee.
— lifting transport equipment into transport vehicles.

Figure 10

Proper Lifting Techniques



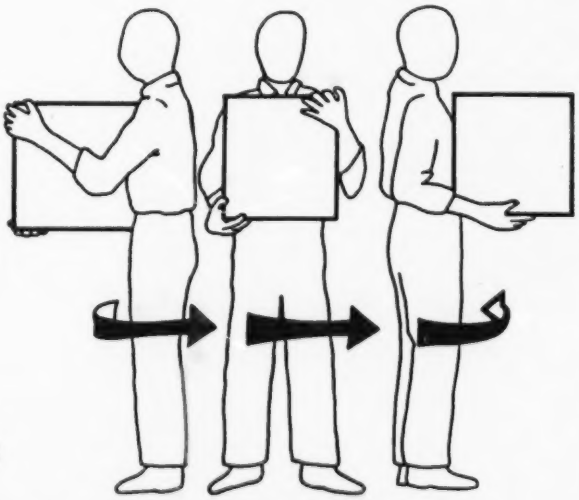
1. Get a firm footing

2. Bend your knees

3. Grasp the object with your hands and tighten your abdominal muscles

4. Pull the load close to your body

5. Lift with your legs



6. Keep your back staight

Plan for Fire Emergencies

Fires in food service establishments are very common. Flammable oil, electrical equipment, and natural gas are fire hazards. Also, carelessness during meal preparation, accumulation of grease in exhaust hoods and ducts, and the lack of fire prevention training contribute to the high incidence of food-service related fires. The appropriate number and type of fire extinguishers must be available to handle fire emergencies in the food service area.

The proper extinguishers are essential for every different class of fire. Simulated emergencies and training that teach employees how to use extinguishers are also important. Instructions for operating fire extinguishers must be reviewed with employees **before** a fire starts. In addition, emergency and evacuation procedures must be developed and disseminated to employees. The local fire department can assist with training food-service employees and identifying fire hazards. The following guidelines can help school agencies develop a school food service fire emergency plan.

1. Seek the assistance of the local fire department to develop a written fire emergency plan. This plan should outline the
   - fire extinguishing methods to use.
   - evacuation procedures to follow.
   - designation of specific employees with responsibility for

   — directing the evacuation.
   — contacting the fire department and sounding fire alarm.
   — extinguishing the fire.
   — notifying all employees and students in the building.

2. Post the fire emergency plan that lists each employee's responsibility.

3. Review the fire emergency plan with employees once each month.

4. Inform new employees of the fire emergency plan as a part of their orientation.

5. Update the plan on a yearly basis (or more often if staffing or other changes occur).

6. Conduct a monthly fire drill for the food service employees to demonstrate the plan.

7. Conduct an evacuation of the lunchroom once each year. (The lunch service does not have to be interrupted for this evacuation. Students can be brought to the lunchroom at another time during the school day for the practice evacuation.)

8. Establish a fire extinguishing system maintenance program to assure that equipment has been recharged and is in operational order, and that the system has been updated.

9. Locate the fire extinguishers in an appropriate location and at the appropriate height for employees.

Figure 11

	Types of Fires	Proper Extinguisher
Class A	**Common Combustibles** Wood Paper Textiles	 Soda-acid Foam Multi-purpose dry chemical Water pump
Class B	**Flammable Liquids and Gases** Oil Grease Gasoline Paint Hydrogen Acetylene Paint thinners	 Foam Carbon dioxide Regular dry chemical Multi-purpose dry chemical
Class C	**Electrical** Electrical equipment Wiring Motors	 Carbon dioxide Regular dry chemical Multi-purpose dry chemical

Staff Development and Training 3

Training Opportunities

Training Opportunities

Staff development and training are integral parts of a sanitation and safety program. Food service employees are the key to preparing appealing, wholesome food without causing injury to themselves, staff, or customers. Although some employees possess many of the skills necessary for their job functions before they are hired, all employees benefit from an established training program. Training and development will ensure that employees understand the purpose of sanitary and safe work practices established for the agency and provide the motivation to continue these practices.

In addition, trained employees tend to

- make efficient use of time.
- commit fewer errors.
- have fewer crises.
- constantly improve their job skills.
- take interest in their work and success of the operation.
- reduce the cost of the operation without compromising quality and the standards established for sanitation and safety.
- have the time to deal with important matters.

Staff development offered by a comprehensive training program promotes positive staff relations and contributes to the professional and personal growth of the employee. School agencies are encouraged to develop a plan that includes: orientation, on-the-job instruction, staff meetings, and formal sessions. The various positions within the food service operation, the skills and experiences, goals and objectives of the agency, and the individual staff members are factors to consider.

Ongoing training is an essential part of successful food service. Constant learning activities reinforce safety and sanitation habits. Training opportunities include

- job orientation;
- employee handbooks;
- staff meetings;
- coffee breaks;
- table top displays and posters;
- routing of newspaper clippings, journal articles, or manuals;
- videotapes or films;
- technical-college-sponsored courses;
- Department-of-Public-Instruction-sponsored management development courses and workshops; and
- University-sponsored courses and seminars.

Staff Meetings

Participation in group meetings is the most successful form of employee communication because spoken word, and face-to-face communication, are usually more effective than the written word. Staff meetings also encourage a two-way flow of information which gives the employees an opportunity to talk informally with their supervisor and the supervisor a chance to demonstrate that she or he will work with the employees.

Scheduling is an essential aspect of planning a meeting. Time constraints can be a problem when scheduling meetings during working hours, but attendance and cooperation are not

certain unless employees are paid for their time. Meetings held during working hours assure maximum attendance, emphasize the importance of attending meetings, and do not impose on employees' free time.

Staff meeting time can be maximized if the supervisor, with employees' input, prepares an agenda before the meeting. Both time limits and an established schedule (the first Monday of the month from 3:00 to 4:00 PM) help establish the meeting as an important aspect of work.

Posters Plus

Posting bits of information in the food service and cafeteria areas is an effective way to disseminate sanitation, safety, and health messages. Posters can be ready-made or custom-designed (with assistance from the art department or created by food service employees). The most effective posters present a brief message in conjunction with cartoons or drawings to attract attention. Complicated topics should be presented on a series of posters. Possible topics for posters could include

- safe handwashing procedures.
- proper manual dishwashing procedures.
- instructions for cleaning and sanitizing equipment.
- proper lifting.
- Heimlich maneuver.
- nutrition and health.

Messages can be posted to take advantage of spare moments or provide specific direction in a work area. For example, messages about nutrition and health can be conveyed with a table tent placed on the table used for lunch or coffee breaks. A poster that demonstrates proper handwashing steps would be appropriate for the wall above the handwashing sink. Posters can also be positioned around

- bulletin boards,
- time clocks,
- serving line,
- locker rooms, and
- refrigerator doors.

Videotapes

Videotapes have become the state-of-the-art training mode in many work places. Taped programs can be an inexpensive, effective tool for school food service employee inservice sessions and for new employee orientation. The following techniques may enhance the training experience for the participants.

1. Know the training needs and choose an appropriate tape.

2. Become familiar with the videotape—view it several times before the training session.

3. Define the objective(s) for showing the tape:
   - Why was the videotape chosen as a training tool?
   - What are the concepts that the supervisor wants to convey to the learner?

4. Prepare an introduction to the videotape that relays the objectives to the learner.

5. Plan breaks and activities to enhance the learning experience.
   - Attention span and absorption capacity decline if viewing time exceeds 15 to 20 minutes. A lengthy videotape can be shown in segments with activities or group discussion interjected to hold interest. Use this same approach to reinforce key points or to handle difficult subject matter.
   - Feel free to stop the videotape at a strategic point to emphasize or clarify the subject matter. Activities can include
   — class discussion.
   — demonstrations.
   — case study or problem-solving group activity.
   — worksheets.

6. Assign tasks to the participants before showing the videotape to focus attention on the material and to help zero in on the key points. For example, some of the following phrases may be helpful:
   - "While watching this videotape, I'd like you to pay special attention to . . . ."
   - "The two ways to . . . are shown in this videotape and we'll be discussing these key points as a group after we view the videotape."
   - Present a pretest to allow the participants to discover what they know about the materials.

7. End the training session by summarizing the key points and providing participants with an opportunity to express what they have learned and how they plan to apply that knowledge.*

Training Schedule

A schedule of sanitation and safety topics, planned on an annual basis, is an ideal way to make sanitation and safety training part of the regular staff meeting. Suggested topics for monthly meetings include:

August: Begin the school year by explaining the employee dress code, personal hygiene practices, and other employee policies and procedures.

September: Invite the local sanitarian or health department to give a short presentation on food-borne illness and safe food handling procedures.

October: Take one or more of the food service employees on a visit to another school food service program to observe sanitation practices.

November: Invite a representative from one of the companies that furnishes the chemicals to demonstrate the care and maintenance of the dish machine and proper use of the cleaners.

December: Review the monthly cleaning schedules and the responsibilities of each employee.

January: Invite a Red Cross or a certified CPR instructor to demonstrate the Heimlich maneuver.

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* Some of the material was taken from the article "At the Picture Show" by Karla Sneegas, C.H.E. Program Specialist, published in the South Carolina Department of Education, *Palmetto Apple*, 7.3 (November) 1988.

February: Plan a heart healthy snack and invite a local dietitian to discuss the effects of exercise and diet.

March: Plan or review the emergency evacuation procedures for fire, tornado, or other emergencies. Invite the local fire marshall. Conduct an actual evacuation of the building during the month in conjunction with a safety and sanitation inspection.

April: Include a back safety demonstration by the physical education instructor or a local physician.

May: Complete the summer maintenance list for custodial staff. Invite the chief custodian to the meeting.

Other topics could include:
- first aid training.
- handwashing demonstration.
- fire safety: fire extinguisher and fire extinguishing systems demonstration.
- employee policy and procedures.
- use and care of thermometers.

Planning a Training Session

An intensive training session can be an effective way to perpetuate staff development. The following format suggests how to plan and organize a training session.

1. **Description of learning session.** Describe the purpose of the learning session and the expected learning outcome in one or two sentences.

2. **Objectives of learning session.** Identify the specific objectives.

3. **Resources needed.** List the materials (handouts, transparencies, books, pamphlets), equipment (audio-visuals), and other items needed to conduct the training.

4. **Suggested Time Frame.** Determine the length of time needed to conduct the training.

5. **Training Outline.** Outline the major points that will be covered by the facilitator when conducting the training session. A script can be written using the outline, if preferred.

Sample Training Session ■

Food-Borne Illness

Description of learning session: This learning session will provide food-service employees with information about food-borne illness and illustrate the importance of sanitary practices.

Objectives of learning session:
- Identify the terminology used by the environmental health profession relevant to food-borne illness.

- Identify the types of food-borne illness.
- Describe how pathogens grow and multiply to dangerous levels in food.
- Reinforce sanitary food storage, handling, and holding methods that
— minimize contamination of foods by pathogens and harmful additives.
— destroy or inhibit the growth of pathogens.

Resources needed:
- Handouts:
— A - Food-Borne Illness Terminology
— B - Some of the Most Common Food-Borne Illnesses
— C - Factors Most Frequently Responsible for Food-Borne Illness
- Food-Borne Illness Training Outline

Food-Borne Illness Training Session Outline

1. Introduction and overview of session:

   The mission of the nutrition program at _____ is to provide students
   (*name of school*)
   with nutritious and wholesome food at a minimal cost. The measures taken to follow proper food storage, handling, and holding methods will help to ensure that food retains nutrients, looks appealing to the students, and is safe to eat.

   Today, we are going to discuss what all food handlers and servers need to know about food-borne illness. For some of you, this session will be a review. Please feel free to ask any questions.

   Food-borne illness can be prevented—providing that the food is stored, prepared, and served in a sanitary and safe manner by healthy food service personnel. Investigations of food-borne illness have shown that the majority of reported food-borne illness outbreaks are the results of carelessness and unsanitary food handling practices.

2. Introduction of terms:

   Before we begin the discussion of food-borne illness, let's define some of the terms that we will be using in this session. These terms are used by environmental health specialists when referring to food-borne illness.

   [Discuss definition of the terms listed on Handout A and answer questions.]

3. Discuss the types of food-borne illness.

   Chemical Intoxication: Introduction of harmful chemicals into food source during growth, processing, transportation, storage, handling, or service. Pesticides, cleaning or sanitizing agents, and food additives or flavorings are examples.

   Bacterial: The bacteria present in the food are able to multiply due to favorable conditions.

   Because these pathogens are implicated in most food-borne illnesses, we will be spending most of this session discussing this type of food-borne illness.

To multiply, bacteria need the following favorable conditions:

- **Food:** Food items in the "potentially hazardous foods" category are of prime concern.

[Mention specific food items in this category.]

- **Moisture:** Bacteria need moisture to absorb food through the cell walls (process of osmosis). About 15 percent moisture content is necessary for osmosis to occur. Dry food products such as crackers, flour, and beef jerky are excluded from the "potentially hazardous" category.

- **Oxygen:** Most bacteria implicated in food-borne illness are "aerobic" and require oxygen.

The *Clostridium botulinum* organism which produces and releases a toxin into food thrives when oxygen is not present. It needs "anaerobic" conditions.

- **Acidity:** Neutral or slightly acid conditions are necessary for bacterial growth and reproduction.

The pH scale measures acid and alkaline concentration. Acidity (0 on the scale) and alkaline (14 on scale). Lemons, a high acid food with a pH of 2, are not good media for bacterial growth. Food items in the slightly acid or neutral range are fresh meat, chicken, milk, eggs, and fish.

- **Temperature:** Most bacteria that can cause food-borne illness thrive best at temperatures slightly above and below our body temperature. Active growth of bacteria can occur at temperatures of 40°F to 140°F. This temperature range is known as the "danger zone."

Bacteria are usually killed at temperatures exceeding 140°F. Some types of bacteria develop a "spore" form that makes them resistant to heat. Spores are inactive during this phase but can revert to the active phase when food has cooled.

- **Time:** Bacteria need time to grow to large numbers and/or produce the toxins that make you ill. The size of the bacteria colony will grow the longer bacteria remain in a favorable environment.

4. Review the handout "Factors Most Frequently Responsible for Food-Borne Illness."

5. Develop, with the assistance of the food service staff, a list of practices that will control the conditions of time and temperature. Examples follow:

- Use quick chill methods to reduce temperature of hot food items to 40°F within four hours. Immediately refrigerate leftovers.

- Prepare food as close to meal service as possible.

- Store foods at the appropriate temperature (cold items at 40°F or below and hot items at 150°F or above—as per Wisconsin Health and Social Services Restaurant Code HSS 196).

- Do not use leftovers that have been exposed to contamination and time or temperature abuses.

- Thoroughly bake or cook potentially hazardous food items.

6. Develop, with the assistance of the food service staff, a list of practices that will reduce contamination of food. Examples follow:

   - Obtain food from an approved source.

   - Establish a policy that prohibits food service staff with respiratory or gastrointestinal illness and infected wounds from handling food.

   - Prevent cross-contamination by using a clean and sanitized cutting board for foods.

   - Use food grade containers for storing, preparing, and serving food.

   - Eliminate copper and chipped/damaged porcelain containers from the food service area.

   - Label food storage containers and store food in a separate area from chemicals.

Terminology presently used by environmental health specialists:

Food-Borne Illness Terminology

Bacteria: Microscopic living organisms that can be found everywhere in the environment. Some types of bacteria are of benefit to people, others are harmless, and some are dangerous (cause food-borne illness or spoil food). Most bacteria that make people ill grow quickly at body temperature, are killed by high temperatures, and are inactivated by freezing.

Food-borne disease outbreak: An incident in which (1) two or more persons experience a similar illness, usually gastrointestinal, after ingestion of a common food, and (2) epidemiologic analysis implicates the food as the source of illness. Exception: one case of botulism or chemical poisoning constitutes an outbreak.

Food-borne illness: A term applied to all types of illness caused by an organism, substance, or material of any kind which is present in food and gains entrance to the body when such food is eaten.

Food-borne infection: An illness that results from the consumption of food contaminated with pathogenic (disease-producing) bacteria or viruses. Examples are bacteria from the *Salmonella* and *Shigella* genus. The bacteria grow quickly in the intestinal tract to produce symptoms such as nausea, diarrhea, and vomiting. These symptoms usually occur within 6 to 72 hours following consumption of contaminated food.

Food-borne intoxication: An illness that results from the consumption of foods containing a poisonous substance in a quantity sufficient to make it injurious to health. The harmful element may be the toxins (by-products) of bacteria (for example, *Staphylococcus*) or chemicals (for example, arsenic, lead, copper).

Pathogens: Any microorganism or virus capable of causing human illness. Examples are bacteria and viruses.

Potentially hazardous foods: Any foods that consist in whole or in part of milk or milk products, eggs, meat, poultry, fish, shellfish, edible crustacea, or other ingredients, including synthetic ingredients, in a form capable of supporting rapid and progressive growth of infectious or toxigenic microorganisms. "Potentially hazardous food" does not include foods which have a PH level of 4.6 or below or a water activity (a_w) value of 0.85 or less.

Suspected food-borne outbreak: An incident in which (1) two or more persons experience a similar illness, usually gastrointestinal, after ingestion of a common food, and (2) data are insufficient for epidemiologic analysis; however, a specific food source is suspected.

Viruses: Submicroscopic infectious agents that cause diseases and are capable of multiplying by invading living cells.

Handout B

Common Food-Borne Illnesses

Food Illness Caused by Bacteria

Illness	Salmonellosis	Campylo-bacteriosis	Perfringens Food Poisoning	Staphyloccal Food Poisoning	Botulism
Bacteria	*Salmonella*	*Campylobacter jejuni*	*Clostridium perfringens*	*Staphylococcus aureus*	*Clostridium botulinum*
Foods Associated with Illness	Meat, fish, eggs, dairy products, custard, gravy	Meat, pork, poultry, unpasteurized milk	Meat, poultry, fish, and mixtures containing meat/poultry items	Meat, poultry, egg products, tuna, potato and macaroni salads, cream filling, milk products	Canned or vacuum-packed low-acid foods, fried onions, baked potatoes, sausage
Onset	6-48 hours	2-5 days (Slow)	8-12 hours	30 min.-8 hours (Rapid)	4-36 hours
Duration	2-7 days	2-7 days	12-24 hours (Short)	1-2 days	Can be fatal. Obtain immediate medical help.
Symptoms	Abdominal cramps, diarrhea, nausea, fever, and headache. Symptoms are most severe for infants, elderly, and immune compromised.	Diarrhea, vomiting, fever, malaise, abdominal cramps, sometimes bloody stool.	Mild abdominal cramps, chills, diarrhea, headache, nausea, and some vomiting.	Severe nausea, diarrhea, vomiting, abdominal cramps, prostration.	Double vision, dizziness, nausea, vomiting, breathing, speech, and swallowing difficulties. Progressive paralysis of the respiratory system.
Prevention	Thorough cooking. Prompt and proper refrigeration. Proper sanitation (especially washing and sanitizing hands, equipment, cutting boards after contact with raw food).	Thorough cooking. Proper refrigeration. Proper sanitation. Milk pasteurization.	Keep hot foods containing meat and poultry items at temperature above 150°F during holding periods. Promptly refrigerate leftovers. Use methods to reduce temperature of foods to 40°F within 2 hours. Reheat leftovers to 170°F.	Toxin produced by bacteria in food is not destroyed by cooking. Proper handling, storage, cooking, and refrigeration. Handwash frequently.	Obtain food from sources that comply with laws relative to food and food labeling. Do not use home canned products. Do NOT use bulging, leaking, or dented cans or cracked jars. Discard contents of cans that show any signs of spoilage when opened. Do not taste this product. Hold hot foods at or above 150°F.

Common Food-Borne Illnesses

Food Illness Caused by Virus

Illness	**Hepatitis**	**Norwalk Viral Illness**
Virus	*Hepatitis A*	*Norwalk Virus*
Foods Associated with Illness	Mollusks from polluted water	Shellfish, coleslaw, salads, baked goods
Onset	10-50 days after ingestion	1-2 days
Duration	Varies	1-2 days
Symptoms	Malaise, appetite loss, nausea, vomiting, fever. After 3-10 days patient can develop jaundice.	Diarrhea, nausea, vomiting, abdominal pain, headache, and fever.
Prevention	Frequent handwashing, proper cooking.	Frequent handwashing, stay home when ill.

Food Illness Caused by Protozoa

Illness	**Giardiasis**
Protozoa	*Giardia lamblia*
Foods Associated with Illness	Uncooked foods
Onset	1-3 days
Duration	Until treated
Symptoms	Explosive, watery stools, abdominal cramps, cachexia, nausea, vomiting.
Prevention	Frequent handwashing, avoidance of untreated water.

Information for the table came from: "The Unwelcome Dinner Guest—Preventing Food-Borne Illness"—*FDA Consumer*, Jan.-Feb. 1991 and "Introducing the Norwalk Virus," *Food News for Consumers*, Winter 1989.

Handout C

Factors Most Frequently Responsible for Food-Borne Illness

1. Inadequate refrigeration or cooling
2. Preparation of food too far in advance of service
3. Holding hot foods at bacterial incubation temperatures
4. Infected food service employee handles the food
5. Inadequate reheating
6. Inadequate cleaning of equipment
7. Indiscriminate use of leftover foods
8. Cross-contamination of bacteria from one food item to another when both contact a common food contact surface
9. Inadequate cooking or heating
10. Storage of acid foods in toxic metal containers
11. Adding contaminated ingredients to uncooked food
12. Contamination with intentional additives
13. Accidental contamination
14. Foods obtained from an unapproved food source

Items are ranked according to the frequency. Item 1 is the most frequently implicated cause and Item 14 is the least frequently implicated cause.

Safety 4

The Inspection Process

The Inspection Process

Food service safety inspections can help identify safety risks before an accident or injury occurs. Safety inspections enable

- management and the supervisor to show interest and concern for the employee by identifying unsafe conditions and taking prompt action to remove the hazard.
- employees to look for unsafe conditions and receive recognition when they are safety minded.

The inspection of the food preparation, storage, and service areas should not be limited to a search for unsafe physical conditions. An examination of work practices and procedures is also necessary.

The Inspection Team

The individuals listed below are an asset to the food service safety inspection team.

- custodian or maintenance employee
- insurance company safety representative
- food service supervisor
- food service employee
- local fire inspector
- school safety coordinator
- school principal

The individuals chosen for the team will depend on the facility (size, type of meal production, number of meals produced) resource people available, training programs for food service employees, the number of previous inspections, and kinds of problems anticipated.

The inspection checklist is a valuable tool for the inspection team. (See p. 106.) Checklists can be modified for the facility and the unsafe practices likely to be encountered.

The Inspection Preparation

Inspection team members can benefit from reviewing accident and injury reports before conducting the inspection. Special attention can be given to conditions and locations where accidents have occurred. A meeting to establish the purpose for the inspection and the inspection process are helpful to the team.

The Inspection Report

After the team has had an opportunity to conduct the review and discuss the results, a report should be prepared to summarize the findings. The report should contain a description of the

- unsafe conditions and practices, and
- recommendations for corrective action.

The report, forwarded to the administrator responsible for safety should also contain reasonable time frames for completion of the corrective action.

Document the action taken to eliminate unsafe conditions and practices identified in the inspection team report on file. The action could include

- training for food service employees.
- memos outlining the safe procedures and policy for a specific task.

- work orders for maintenance staff, electricians, plumber, etc.
- purchase orders or invoices for equipment and supplies.

Inspection of the food preparation, service, and storage facilities may reveal some safety problems, but the purpose of the inspection is to assure that employees and students are provided with a safe environment.

Sample Policy ■

Components of a School Food Service Safety Program

1. Statement of Policy

- Establishes that safety and accident prevention are essential aspects of food service and that all employees need to understand and follow safe practices and procedures.
- Formalizes the commitment to safety and delegates responsibility to a committee or person to develop and carry out accident prevention and safety education programs.

2. Safety Training and Incentives

- Train employees and students in all aspects of safety procedures and policies of the school district.
- Provide incentives and recognition to motivate employees to follow safety rules and regulations.

3. Safety Inspections

- Uses objective personnel to periodically examine the food preparation, storage, and service areas; *and* the work practices to find out the extent of the safety needs. The school administration, custodial personnel, insurance company safety representative, state or local fire inspector, and food service personnel can be selected for the safety inspection team.
- An ongoing safety inspection is a tool for monitoring performance and detecting hazards.

4. Accident/Injury Reports, Record Keeping, and Accident Analysis

- Comply with the Wisconsin Administrative Code, Chapter 200, that requires an employer to keep and maintain records of injury. This record keeping will also assist the school and district to determine high risk areas and the effectiveness of the accident prevention program.
- Establish investigation procedures to identify, in a prompt and efficient manner, the circumstances surrounding each accident and the cause of the accident.
- Periodically review the accident and investigation reports for the purpose of developing safety procedures and goals.
- Eliminate hazards or provide preventive procedures once the accident problems have been identified.

5. Training and Supervision

- Develops safe work policies and procedures.
- Trains personnel to follow the policies and procedures as part of the new employee orientation and ongoing training program.
- Supervises employees to ensure that the safe policies and procedures are performed.

■ Sample Form

Safety Inspection Checklist for School Food Service

Electrical		**Comments**
Is electrical equipment properly grounded?	Yes ☐ No ☐	
Is electrical equipment provided with an adequate maintenance program?	Yes ☐ No ☐	
Are electric switches located at a high point, away from moisture?	Yes ☐ No ☐	
Are these switches located so they can be readily reached in an emergency?	Yes ☐ No ☐	
Are the switches located so that it is not necessary to lean on or against metal equipment when reaching for the switch?	Yes ☐ No ☐	
Are sufficient outlets available to eliminate the need for "octopus" multi-socket connections and extension cords?	Yes ☐ No ☐	
Are the fuses or circuit breakers of the correct capacity?	Yes ☐ No ☐	
Equipment		
Are electrical appliances shut off when not in use and disconnected when being cleaned?	Yes ☐ No ☐	
Are employees properly instructed in the operation of machines?	Yes ☐ No ☐	
Are employees forbidden to use equipment unless specifically trained in its use?	Yes ☐ No ☐	
Are machines properly guarded? (slicer)	Yes ☐ No ☐	
Are guards always used by all employees?	Yes ☐ No ☐	

Equipment (cont.)		Comments
Is a pusher or tamper provided for use with the grinder?	Yes ☐ No ☐	
Are equipment items in safe operating condition?	Yes ☐ No ☐	
Are the mixer beaters properly maintained to avoid injury from broken metal parts and foreign particles in the food?	Yes ☐ No ☐	
Are as many machines as possible mounted on portable tables for easy movement in preparation area?	Yes ☐ No ☐	
Do the portable tables have station lock devices to keep the table stationary when in use?	Yes ☐ No ☐	
Are machines that are improperly working tagged and put out of service? (See School Food Service Hazard Identification Card, p. 116.)	Yes ☐ No ☐	
Is all steam equipment operated within the manufacturer's recommended limits?	Yes ☐ No ☐	
Are hot water relief valves inspected regularly?	Yes ☐ No ☐	
Can heavy lids on equipment such as steam kettles be secured to prevent accidental closing?	Yes ☐ No ☐	
Do machines used for slicing, cutting, grinding, etc., have guards placed on all toggle switches to prevent accidental starting?	Yes ☐ No ☐	
Do walk-in freezers and coolers have an inside light switch and a way to open the door from the inside?	Yes ☐ No ☐	
Are cords and plugs in good condition?	Yes ☐ No ☐	

Equipment (cont.)		Comments
Do electric appliances and accessories bear the testing laboratory label?	Yes ☐ No ☐	
Are the cooling coils for refrigeration units clean and well-ventilated?	Yes ☐ No ☐	
Have motor inspections and maintenance schedules been developed and are these schedules followed?	Yes ☐ No ☐	
Chemicals		
Are chemicals kept on premises necessary for maintaining the food service operation, cleaning and sanitizing equipment and utensils, and controlling insects and rodents?	Yes ☐ No ☐	
Are containers of poisonous or toxic materials labeled for easy identification of product?	Yes ☐ No ☐	
Are chemicals from the following three categories of chemicals in physically separate areas from each other?		
(a) insecticides and rodenticides	Yes ☐ No ☐	
(b) detergents, sanitizers, related cleaners	Yes ☐ No ☐	
(c) caustic acids, polishes, and other chemicals	Yes ☐ No ☐	
Are toxic and poisonous chemicals kept in locked cabinets or storage areas?	Yes ☐ No ☐	
Utilities		
Does each employee know where the water turn-off valve and fuse box/circuit breakers are located?	Yes ☐ No ☐	
Are steam, gas, and water pipes identified?	Yes ☐ No ☐	

Utilities (cont.)		Comments
Are all steam pipes that are within 7 feet of the floor or working platform, which the employee may contact, properly insulated, covered, or guarded?	Yes ☐ No ☐	
Ventilation		
Do all rooms have sufficient ventilation to keep them free of excessive heat, steam, condensation, vapors, obnoxious odors, smoke, and fumes?	Yes ☐ No ☐	
Are intake and exhaust air ducts maintained to prevent the entrance of dust, dirt, and other contaminating materials?	Yes ☐ No ☐	
Are exhaust hoods and ducts grease free and cleaned regularly?	Yes ☐ No ☐	
Are filters in hoods cleaned or replaced on a monthly basis?	Yes ☐ No ☐	
Noise		
Are unnecessary noises eliminated by oiling squeaky hinges and moving equipment parts, installing noise absorption devices, etc.?	Yes ☐ No ☐	
Floors		
Are floors and ramps regularly and adequately maintained, free from broken tiles and defective floor boards?	Yes ☐ No ☐	
Are employees instructed to pick up or clean up immediately all dropped items and spillage?	Yes ☐ No ☐	
Are passageways, fire extinguishers, and electrical breaker panels clear of carts, boxes, trash cans, or other items?	Yes ☐ No ☐	
Are non-slip mats secured and appropriate for kitchen use?	Yes ☐ No ☐	

Floors (cont.)		Comments
Do all sinks and dish machine areas have non-slip floors, safety mats, or safety strips?	Yes ☐ No ☐	
Lighting		
Are light bulbs and fluorescent tubes, and infrared or other heat lamps shielded to protect against broken glass?	Yes ☐ No ☐	
Do artificial light sources provide at least 20 foot candles in all food preparation and storage areas and at least 10 foot candles of light in all other areas?	Yes ☐ No ☐	
Fire Extinguisher/Fire Control Systems		
Are adequate and proper fire extinguishers provided?	Yes ☐ No ☐	
Are employees instructed in the proper use of the extinguishers and which extinguisher to use according to type of fire?	Yes ☐ No ☐	
Are the heads of the automatic fire control system nozzles directed toward the potential fire area?	Yes ☐ No ☐	
Has the local fire inspector approved the automatic fire control system in place for deep fat fryers?	Yes ☐ No ☐	
Are extinguishers inspected each year and tagged to indicate the date of the last inspection?	Yes ☐ No ☐	
Food Preparation Areas		
Are knives and cutting tools kept sharp?	Yes ☐ No ☐	
Are knives and cutting tools stored with blades protected and placed so they do not protrude into walkways?	Yes ☐ No ☐	
Do counters or tables in the kitchen have rounded or protected edges?	Yes ☐ No ☐	

Food Preparation Areas (cont.)		Comments
Are doors and drawers kept closed when not in immediate use?	Yes ☐ No ☐	
Are aisles and passageways 4 feet wide to allow for carts, two-way traffic, and wheelchairs?	Yes ☐ No ☐	
Dishmachine Areas		
Are anti-slip floor coverings (strips, mats) in place to prevent falls?	Yes ☐ No ☐	
Is the dishmachine operated in accordance with manufacturer's instructions and safety rules?	Yes ☐ No ☐	
Storage Areas		
Can shelves bear the weight of items stored?	Yes ☐ No ☐	
Are heavy items stored on lower shelves?	Yes ☐ No ☐	
Is an appropriate size ladder available at all times?	Yes ☐ No ☐	
Are cartons and flammable materials stored away from light bulbs?	Yes ☐ No ☐	
Are cleaning equipment such as brooms, mops, carts, pails, etc., stored where they will not be a hazard to workers and contaminate food?	Yes ☐ No ☐	
Is the stock neatly organized?	Yes ☐ No ☐	
Is the area kept free of paper, rags, debris, items no longer in use, pickle pails, and other food containers?	Yes ☐ No ☐	
Receiving Areas		
Are appropriate tools available for opening crates, boxes, cartons, barrels, etc.?	Yes ☐ No ☐	
Have all employees been trained in correct handling and lifting methods for various types of materials?	Yes ☐ No ☐	

Receiving Areas (cont.)		Comments
Are floors and/or deck areas clear and hazard free?	Yes ☐ No ☐	
Are trash cans or dumpsters adjacent to the receiving area leak-proof and adequate in size for needs?	Yes ☐ No ☐	
Serving Area		
Are serving counters and tables free from broken parts and wooden or metal slivers and burrs?	Yes ☐ No ☐	
Does the traffic flow prevent children from colliding while obtaining or carrying food?	Yes ☐ No ☐	
Are serving containers arranged in a way to prevent reaching over hot containers?	Yes ☐ No ☐	
Are carts used to haul containers of food to food service units/areas to avoid exertion, injury, and burns?	Yes ☐ No ☐	
Are walkways free of electrical cords?	Yes ☐ No ☐	
Safety Training/Procedures		
Have evacuation procedures been established and practiced?	Yes ☐ No ☐	
Are the numbers of the fire, police departments, school security (if applicable), ambulance service, and other emergency contacts posted?	Yes ☐ No ☐	
Have food service personnel been trained for a life-threatening situation:		
(a) use of a fire extinguisher and/or fire blanket	Yes ☐ No ☐	
(b) cardiovascular pulmonary assistance (CPA)	Yes ☐ No ☐	

Safety Training/Procedures (cont.)		Comments
(c) Heimlich maneuver	Yes ☐ No ☐	
(d) profuse bleeding	Yes ☐ No ☐	
(e) serious burns	Yes ☐ No ☐	
(f) student injury	Yes ☐ No ☐	
(g) diabetic reaction	Yes ☐ No ☐	
(h) epileptic seizure	Yes ☐ No ☐	
Are all horseplay and practical jokes prohibited?	Yes ☐ No ☐	
Have appropriate rules for behavior for students in the cafeteria been established?	Yes ☐ No ☐	
Is smoking prohibited in food service areas where food is prepared, served, or stored?	Yes ☐ No ☐	
Do the purchasing specifications prohibit glass jars?	Yes ☐ No ☐	
Has appropriate attire been established for food service employees (clothing, jewelry, no open toe/high heel shoes)?	Yes ☐ No ☐	
Are employees required to report all accidents, no matter how minor, to the immediate supervisor?	Yes ☐ No ☐	
Is a first aid kit accessible to all workers and stored in a way that prevents contamination of food and food contact surfaces?	Yes ☐ No ☐	
Are medications prohibited in the food storage, preparation, or service areas?	Yes ☐ No ☐	
Are employees assigned to any machine or mechanical or electrical device only after they have received training and instruction related to its safe operation?	Yes ☐ No ☐	

Emergency Procedures		Comments
Has an emergency plan been developed for fire, injury, tornado, and others?	Yes ☐ No ☐	
Is this plan reviewed each year and updated?	Yes ☐ No ☐	
Has each employee been trained for his/her emergency duty?	Yes ☐ No ☐	
Are emergency procedures included with employee orientation programs?	Yes ☐ No ☐	
Are emergency drills and evacuations practiced?	Yes ☐ No ☐	
Are the fire department, emergency medical assistance (or 911) phone numbers posted near the telephone? (See Emergency Information poster, p. 115.)	Yes ☐ No ☐	
Are the fire alarm box locations known to all employees?	Yes ☐ No ☐	
Are exits and fire door closures unobstructed and in good working order?	Yes ☐ No ☐	
Has the fire department inspected the premises to become acquainted with storage areas, passageways, and other locations that are pertinent in fighting fires and/or evacuating?	Yes ☐ No ☐	

Emergency Information

	Telephone
Fire	
Nearest alarm box	
Police	
Ambulance	

Avoid infection of minor injuries; always get medical attention or skilled first aid.

Doctor	Home Telephone
Office Address	Office Telephone
Hospital	Telephone
Address	

In all cases of fire, crime, accident, or sickness, promptly notify:

Name 1.	Office Telephone
Address	Home Telephone
Name 2.	Office Telephone
Address	Home Telephone

■ Sample Form

School Food Service Hazard Identification Card

The _____ is eager to identify the hazards that
(*name of school agency*)
exist in the food service area. Your cooperation will help detect conditions or situations that could cause an accident. Please complete the hazard recognition card when you come across a dangerous condition or unsafe act and return the card to your supervisor. These cards can be found _____.
(*name of location*)

Thank you for helping to make the food service area a safer place to work.

HAZARD RECOGNITION CARD

Use this card to report any unsafe act or condition to your immediate supervisor.

Building _____

Area _____ Date _____

☐ Unsafe Act ☐ Condition

SAMPLE

Appendixes 5

A. Resources
B. Wisconsin's Right to Know Law

Appendix A

Resources

Books

Cichy, Ronald F. *Sanitation Management*. East Lansing, MI: Educational Institute of American Hotel and Motel Association, 1984.

Cliver, Dean O. Ed., *Foodborne Diseases*. San Diego, CA: Academic Press, Inc., 1990.

Longree, Karla. *Quantity Food Sanitation*. 3rd Ed. New York: Wiley-Interscience, 1980.

Pannell, Dorothy VanEgmond. *School Food Service Management*. 4th ed. New York: Van Nostrand Reinhold, 1990.

Programmed Cleaning Guide for the Environmental Sanitarian. New York: Soap and Detergent Association, 1984. (475 Park Avenue South, New York, NY 10016, (212) 725-1262)

Richardson, Treva M. and Wade R. Nicodemus, *Sanitation for Foodservice Workers*. 3rd Ed. Boston: CBI Publishing Company, Inc., 1981.

Periodicals

FDA Consumer, published monthly by the Food and Drug Administration, U.S. Public Health Service, Department of Health and Human Services. Subscriptions are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

Food News for Consumers, published four times a year by the U.S. Department of Agriculture, Food and Safety Inspection Service. Subscriptions are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

Morbidity and Mortality Weekly Report, published weekly by the U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control, National Center for Infectious Disease, Atlanta, GA 30333.

Journal of Food Protection, published monthly by the International Association of Milk, Food, and Environmental Sanitarians, Inc. (P.O. Box 701, Ames, IA 50010).

Publications

Chapter HSS 196, Restaurants, developed by the Wisconsin Department of Health and Social Services—Hotels, Restaurants, and Recreational Sanitation Section—Bureau for Environmental Health. Copies can be obtained for school agencies from the Wisconsin Department of Public Instruction, Bureau for Food and Nutrition Services, P.O. Box 7841, Madison, WI 53707-7841, (608) 266-3509.

Food, Hands and Bacteria, Food Spoilage and You, Preventing Food Poisoning and Food Infections, What are Bacteria, Yeasts, and Molds? Copies of these booklets can be obtained for 35¢ each from the Cooperative Extension Service, University of Georgia College of Agriculture, Athens, GA 30602.

Basic Guide for Material Handling to Save your Back. 1983. Copies of this 15-page flyer can be obtained from Dray Publications, Inc., Deerfield, MA 01342, (413) 773-5491.

About Fire Extinguishers, There's Always Time for Safety, 48 Ways to Foil Food Infections, About First Aid, The ABCs of On-The-Job Safety, You and Safety. Copies of these booklets can be obtained from Scriptographic Booklet, Channing L. Bete Co., Inc., South Deerfield, MA 01272, toll free 1-800-628-7733.

Food Service Sanitation Considerations for Food Display and Service, Food Service Thermometers—A Pocket Guide, and *Food Service Maintenance and Measurement of Product Temperatures.* Copies can be obtained from the National Sanitation Foundation, 3475 Plymouth Road, P.O. Box 1468, Ann Arbor, MI 48106, (313) 769-8010.

Videotapes

Food Safety Is No Mystery. 34-minute videotape (VHS, Beta, or 3/4-inch tape), activities, trainer's manual, and four posters prepared by USDA. The package price is $20.50. (3/4-inch tape is $30.50.) U.S. Department of Agriculture, c/o Modern Talking Picture Service, 5000 Park Street North, St. Petersburg, FL 33709.

Safe Hand Washing. Videotape, instructors technical booklet, management implement sheet, student lesson sheet and quiz, laminated hand-washing poster are included in this package for $44.95. Contact O.P. Snyder, Hospitality Institute of Technology and Management, 830 Transfer Road, Suite 35, St. Paul, MN 55114, (612) 646-7077.

Sanitation—Conquering Kitchen Germs. 18-minute videotape, display poster, and a photocopy handout sheet. Willy and his germ gang help employees learn tips about personal hygiene, cross-contamination, holding hot and cold foods, safe ways to thaw foods. Purchase price is $109.95. The Education Institute of the American Hotel and Motel Association, P.O. Box 1240, East Lansing, MI 48826.

Hotline

F.S.I.S. Hotline. Answers meat and poultry questions. The Department of Agriculture's Food Safety and Inspection Service provides a hotline to answer questions about proper handling of meat and poultry, how to tell if it's safe to eat, and how to better understand meat and poultry labels. It can also be called to report problems with meat and poultry products such as foreign objects or strange odors. The toll-free hotline number is 1-800-535-4555 and is in operation from 9 a.m. until 3 p.m. EST, Monday through Friday, except holidays.

Appendix B

Wisconsin's Right to Know Law

The "Employees' Right to Know" Law was passed in 1982 and amended in 1984. This law requires all public and private employers in Wisconsin to inform workers about toxic substances, infectious agents, and pesticides used in the workplace. Workers exposed to specific levels of substances and agents have a right to know about such materials and the possible health hazards. The "Employees' Right to Know" Law places several major responsibilities upon employers. These responsibilities include

- *posting notices in the workplace* informing employees of their right to request information about toxic substances, infectious agents, and pesticides. For a minor, the employer must send the notice to the employee's parent or guardian at the address provided by the employee.
- *responding to written requests from employees* by providing the required information about such substances.
- *providing education and training* for employees who are routinely exposed to toxic substances, infectious agents, or pesticides. The training must include the precautions to be taken when handling these substances and the emergency treatment in the event of overexposure.
- *retaining Material Safety Data Sheets* (MSDS) on toxic substances in the workplace, or maintaining a list of toxic substances present in the workplace and the dates the toxic substances were present. In either case the records shall be kept for 30 years. **Exception:** Any employer with less than ten employees and less than $750,000 in gross annual sales is not subject to the above recordkeeping requirement.

An employer can satisfy many of the law's requirements by voluntarily providing information sheets (material safety data sheets) on the substance being used, effects of overexposure, and emergency clean-up practices.

The Wisconsin Department of Industry, Labor, and Human Relations shall investigate complaints and shall attempt to resolve the complaint by conference, conciliation, or persuasion. If the complaint is not resolved and the department finds probable cause to believe a violation has occurred, a hearing will be scheduled within 60 days of the complaint. The department shall issue its decision within 30 days after the hearing and if a violation is found, the department may order the employer or agricultural employee to take such action as will remedy the effects of the violation.

The law provides a civil forfeiture of up to $1,000 for each violation. Any person who wilfully violates or exhibits a pattern of violations may forfeit up to $10,000 for each violation.

Persons seeking more information on the law or to request an informational packet may contact the following:

Wisconsin Department of Industry, Labor, and Human Relations
Safety and Buildings Division
Bureau for Safety Inspection
P.O. Box 7969
Madison, Wisconsin 53707
Phone: (608) 266-7731

The information was condensed from "Wisconsin Employees' Right to Know," *Wisconsin School Safety Handbook*, prepared by the Wisconsin School Safety Coordinators Association and the Wisconsin Department of Public Instruction, 1986.

Wisconsin Employees' Right to Know Law Compliance Plan

The following summary will assist the school district with preparing a written compliance plan.

1. Identify Chemical Exposures
   - Analyze each task to assess safety and health risks.
   - Identify where in the operations hazardous materials are used and if employees are exposed.
   - List chemicals used or materials that may be present as by-products to which employees may be exposed.
   - Identify quantities used and the frequency of employee exposure.

2. Collect Material Safety Data Sheets (MSDS)
   - Develop a MSDS for all listed chemicals used.
   - Cross reference for synonyms or trade names.
   - Specify a place for MSDS.

3. Identify Exposure Controls (Engineering, Procedural, and/or Personal Protection)
   - Make a list of control measures which are utilized
   — plastic gloves
   — ventilation
   - List jobs when personal protective equipment is used.

4. Review Container Labeling
   - Label and properly mark the original and the immediate use storage containers.

5. Identify Emergency Response Procedures
   - Include the actions to be taken in case of a fire, spills, reactions, or accidental release.
   - Plan by work area for the specific hazardous materials present.
   - Identify the equipment or materials required for correct emergency response, their location, and proper use procedures.

6. Establish Employee and Supervisory Education
   - Conduct session dealing with hazardous substances or physical agents.
   - Identify protective procedures or measures.
   - Discuss emergency response.
   - Discuss MSD sheets and how to locate them.
   - Develop procedures for further discussion.

7. Establish Follow-up Program
   - Update the compliance plan to keep it current by
   — maintaining the chemical inventory,
   — maintaining a current MSD sheet file,
   — providing training for new employees and transferees, and
   — providing annual refresher training.

Prototype Request for Material Safety Data Sheet from Vendor

Dear Supplier:

SUBJECT: "Employee's Right to Know Law," Chapter 364, Wisconsin Laws of 1982, effective December 1, 1982, relating to toxic, hazardous, or infectious substances.

The above referenced law provides that our school district must provide information on any toxic, hazardous, or infectious substance to any employee who makes a written request for data.

We hereby request that you, or your supplier, provide information on items we have purchased from you. Please furnish us within fifteen days of this request a Material Safety Data Sheet(s) for the product(s) listed below which may have toxic, hazardous, or infectious substances. Such substances are defined by the Federal Occupational Safety and Health Standard entitled, "Subpart Z - Toxic and Hazardous Substances, Section 1910.1000-." Please return the form(s) to me.

Product(s): _____
_____
_____
_____
_____

Sincerely yours,

Material Safety Data Sheet

May be used to comply with
OSHA's Hazard Communication Standard,
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

IDENTITY *(As Used on Label and List)*	*Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.*

Section I

Manufacturer's Name	Emergency Telephone Number
Address *(Number, Street, City, State, and ZIP Code)*	Telephone Number for Information
	Date Prepared
	Signature of Preparer *(optional)*

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% *(optional)*

Section III — Physical/Chemical Characteristics

Boiling Point		Specific Gravity (H_2O = 1)	
Vapor Pressure (mm Hg.)		Melting Point	
Vapor Density (AIR = 1)		Evaporation Rate (Butyl Acetate = 1)	

Solubility in Water

Appearance and Odor

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL

Extinguishing Media

Special Fire Fighting Procedures

Unusual Fire and Explosion Hazards

(Reproduce locally) OSHA 174, Sept. 1985

Section V — Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable		

Incompatibility (*Materials to Avoid*)

Hazardous Decomposition or Byproducts

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur		

Section VI — Health Hazard Data

Route(s) of Entry: Inhalation? Skin? Ingestion?

Health Hazards (*Acute and Chronic*)

Carcinogenicity: NTP? IARC Monographs? OSHA Regulated?

Signs and Symptoms of Exposure

Medical Conditions
Generally Aggravated by Exposure

Emergency and First Aid Procedures

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material Is Released or Spilled

Waste Disposal Method

Precautions to Be Taken in Handling and Storing

Other Precautions

Section VIII — Control Measures

Respiratory Protection (*Specify Type*)

Ventilation	Local Exhaust	Special
	Mechanical (*General*)	Other

Protective Gloves | Eye Protection

Other Protective Clothing or Equipment

Work/Hygienic Practices